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EDITED BY

MR. PERCIVALL.

Ars Veterinaria post medicinam secunda est.—*Vergetius.*

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THE

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LAMENESS IN HORSES.

By WILLIAM PERCIVALL, *M.R.C.S. and V.S.*

[Continued from vol. xxii, p. 604.]

CURB.

THE DERIVATION OF "CURB," there can be no doubt, is from the French word *courbe;* the latter answering to the correlative words, *curvare* in Latin, *corbar* in Spanish, *curve* in English, &c. And yet, in the pathological sense in which we understand the word *curb*, we are unable to find in another language a word like it of the same signification. If we turn to the word *courbe* in D'Arboval DICTIONNAIRE VETERINAIRE, our best French authority, we find it defined to be "an *osseous* tumour, hard, of greater or less magnitude, so called because in outline it is more or less *curved;* its seat being *the inner surface of the horse's hock*, precisely where projects the internal condyle of the tibia or bone of the thigh*." The old French author, Solleysel's, definition runs not very wide of this. "The curb," he informs us, "is a large and hard tumour, generated of flegmatic matter, *seated on the inside of the hough*, higher than spavin, on the substance of the tendon that strengthens the part: 'tis a long swelling in the shape of a pear, *cleft through the middle into two pieces*, higher above than below, and sometimes makes the horse halt†." The "osseous" composition of the tumour being here omitted, were it not for the

* COURBE.—Tumeur osseuse, dure, et plus ou moins volumineux, ainsi appellée parcequ'elle décrit une ligne plus ou moins *courbe*. Elle se developpe à la face interne du jarret du cheval, à l'endroit qui repond précisément au condyle interne du tibia ou os du jambe.—*Dict. de Méd. de Chirurg., &c. par D'Arboval.* 2d edit. 1838.

† The Compleat Horseman. By Solleysel. Translated by Hope. 2d edition, 1717.

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erroneous site attached to it, one might pass it for being intended for curb, the "cleaving of it through the middle" being very significant of the shape of the tumour. At all events, our old authors on farriery, succeeding Solleysel, appear to have done so; and in this way we may account for the introduction of the word into our nomenclature.

A CURB MAY BE DEFINED to be, a prominence upon the back of the hind leg, a little below the hock, of a curvilinear shape, running in a direct line downwards, and consisting in effusion into or thickening of the sheath of the flexor tendons.

THE SIGNS OF CURB, then, are a tumour in the situation mentioned, possessing heat and tenderness while recent, and which are sometimes manifest in the surrounding skin as well, commonly attended with lameness, and, when the pain is great, with a flexed position of the limb in standing, the animal resting the weight upon his toe.

SITUATION AND DIMENSION. — The tumour, or prominence rather, rising imperceptibly out of the surface at a distance of from three to four inches below the point of the hock, gradually increases to the extent of one-and-a-half or two inches, and from its middle or most prominent part as gradually decreases, vanishing in the surface of the skin in the same manner in which it took its rise. This gradual rise and decline of the tumour renders it necessary, in order

TO DETECT A CURB, that the observer should stand alongside of the horse's quarter, and not behind him. The eye in this position, running from the point of the hock downward, readily discovers the irregularity or prominence in the posterior line of the limb; whereas, had the view been taken from behind, no swelling would have become visible.

MAGNITUDE.—Although the tumour of curb is never seen of any enormous size, yet is there a good deal of variation in its magnitude in different subjects. In some, in young unbroke horses in particular, the rising is too small to be likely to be detected by any save the practised eye, and, as such, is rarely accounted of any consequence; unless it should happen to be combined with what we denominate "a curby-formed hock." On the other hand, every now and then, the tumours are so prominent and conspicuous that they cause great disfigurement, and are apt very much to depreciate the value of the animal.

THE NATURE OF CURB has certainly been but imperfectly understood, or we should never have had such

VAGUE AND VARYING ACCOUNTS of the disease. The funniest interpretation of a curb on record is, perhaps, that narrated by the late Professor Coleman, who learnt it at a horse cause on which

he was subpœnaed. Mr. (afterwards Lord) Erskine informed the jury that the *hock* of the horse answered to the *knee* of the human being, and that, as shewn by evidence he should adduce (a farrier), such swellings (as curbs) proceeded from a kind of *gout!* Bracken regarded curb in weak "sickle-houghed" horses as an effort of nature to strengthen the parts. Osmer defines curb to be, "a swelling on the joint of the hinder leg, below the hock," but gives no account of its pathology. White considers curb "in nature similar to a strain in the back sinews, and to depend upon the rupture and consequent inflammation of some vascular membranes situated between the two tendons of the gastrocnemii muscles." Spooner (White's commentator) repeats the words of White, "in its nature similar to a strain in the back sinews;" adding, "it depends upon a strain and inflammation of the *strong ligament that passes from the os calcis down the back of the hock to the shank bone*, frequently involving the flexor sinews at the same time." Professor Coleman's opinion I never learnt: I find no notice whatever on the subject in his "Lectures."

Blaine heads his chapter on curb, "CURB OR EXTENSION OF THE *ligaments* OF THE HOCK," and adds, in the course of his description, "or of the sheaths of the tendons passing from the hock downwards, as of the *flexor perforans*." Youatt pronounces curb to be, "either a strain of the ring-like *ligament* which binds the tendons in their place, or of the sheath of the tendons; *oftener, however, of the ligament* than of the sheath."

Thus, there evidently exists among the authorities cited some wavering of opinion respecting the true or exact *seat* even of curb, to say nothing of its pathology. Whether the disease be seated in ligament or sheath of tendon, or in tendon itself, is left undecided. Such dubious or wavering testimony might at first seem to reflect heavily upon veterinary surgeons. And yet, when we come to consider that horses are not shot on account of curbs, and that it is only perchance that a man in practice encounters such things in dead horses, we shall, in part at least, withhold any meditated condemnation. No honest writer, giving the results of his own observation, can describe what he has not seen: his descriptions must—ought at least to be—confined to his own practice in speaking *en maître* on such a point as this.

IN GIVING MY OWN OPINION OF THE PATHOLOGY OF CURB, I would, in the first instance, by way of introduction, call attention to the anatomy of the parts concerned. The flattened tendon of the gastrocnemius internus (muscle), commonly called the *tendo perforatus*, after expanding upon the point of the hock to form a *cap* for it, continues its course straight down the back of the hind leg, clothed by cellular tissue, and by means of it connected with

the parts around, and so confined in its place. In front of the tendon, in the midst of this enveloping tissue, is a serous bursa; while behind it, between its cellular investment and the skin, is a tendinous band to which has been given the name of annular ligament, whose glistening fibres are seen traversing the tendon evidently for the purpose of binding it down, and so in action contributing not a little to its power and effect.

Now, if we, bearing this anatomical sketch in view, revert to the seat of curb, we shall find that the site of the tumour is directly opposite to the bursa in front of the perforatus tendon. Through this bursa or thecal cavity runs the perforans tendon, and it is the play the tendons enjoy at this particular part, in consequence of the existence of the bursa and the looseness and paucity of their attachments, that causes sprain or laceration to be seated here; the part sprained or lacerated being neither the tendon nor the ligament, but the cellular sheath of the tendons. When curb is manifested as the *immediate* consequence of the wrench or sprain, we must, to account for such speedy tumefaction, suppose that bloodvessels are ruptured, and blood extravasated. More commonly, however, an interval elapses ere the swelling rises, and in that interval effusion takes place, of, no doubt, the ordinary sero-lymphy deposit, and this probably pervades cellular tissue and bursa together. This is accompanied—indeed is caused—by inflammation of the parts, which account for the heat, and the pain or lameness. The circumstance of inflammation not immediately following the accident accounts for lameness not shewing itself in all cases at first. Indeed, in some cases the injury sustained appears too slight to bring it on: palpable curb exists, the horse remaining all the while perfectly sound. What ultimately takes place in curb, and, in fact, constitutes the disease in the ordinary, inveterate, or permanent form, being the consequence of interstitial deposit, is a hard, callous condition of the tumour, and this is the state in which horses are brought to us after inflammation has departed. It consists in a thickened and indurated condition of the cellular sheath of the tendons. Therefore, when we come to dissect curb in this, the usual state of parts, what we find is this: We first cut through the skin covering the tumour. This exposes the annular ligament; underneath which is the consolidated and thickened sheath, fibrous perhaps in composition, altogether changed in aspect and texture from what it was, and measuring, as I have seen it, *half-an-inch* across in solid substance. A curb, therefore, might very properly be said to consist in hypertrophy of the *sheath* of the flexor tendons. Doubtless, there occur

Other morbid Appearances.—Diseased action may continue, or return, or be reproduced, and so give rise to them. Mr.

Mayhew found the tendon of the perforans muscle "perceptibly enlarged," shewing "indications of an inflammatory condition." He cut into it, "and from the incision pressure caused to exude *a thick dark-coloured pus*, of the consistence of cream cheese*." The case being one of chronic date, and subject to the suspicion of taint from a malignant disease present, will perhaps be viewed rather in the light of a condition inveterate curb may run on to, than as affording an example of the ordinary pathology of curb.

In a hock I myself dissected, supposed from its outward appearance to harbour a curb, I found a thorn, half an inch in length, sticking in the substance of the perforatus tendon, precisely in the seat of curb.

For reasons I have already stated, viz. the rarity of the occasions afforded us for examining curbed hocks, I should not think of putting my opinions in opposition to the asserted disease of *ligament* in curb—either of the annular, or the external lateral superficial, or the calco-cuboid ligament. All I can say on this subject at present is, that I have not met with disease of the parts in question; and should feel inclined to view such disease, when present, rather as consecutive of, or collateral with, the thecal affection than in the light of the proximate cause of curb.

THE CAUSE OF CURB, investigated, throws a good deal of light upon its nature. It evidently consists in *sprain* or *rupture* of some part; and this part I have shewn from my own observation to be, ordinarily, the cellular sheath and bursa of the *tendo perforatus*. A person takes his horse out for a day's hunt, finds him drop all in a moment excessively lame behind, and afterwards, when he comes to search for the cause of lameness, he discovers he has thrown out a curb. The physiological history of an accident of this kind, therefore, is, that the animal, in going through some slough in the course of the hunt, or over some rough or deep fallow, or in taking some high or wide or awkward leap, or from stepping unawares into a rabbit-hole or mire, has, to save himself from falling while he maintains his pace, been compelled to put his gastrocnemii muscles suddenly, and perhaps unexpectedly, into instantaneous and vigorous action; the result of which has been stretch or "sprain," if not laceration, of the cellular sheath of the perforatus tendon.

Although hard galloping and leaping may be set down as especial causes of curb, yet may the disease be produced in the entire absence of such causes. I have known more than one instance of horses throwing out curbs in the course of even walking exercise. I remember a four-year-old blood troop mare walking only from

* See VETERINARIAN, vol. xx, p. 15.

the Regent's Park to Wormwood Scrubs and back, and being the following morning brought to me for having "thrown out a curb." Another accident of the kind I recollect happening to another troop (aged) horse, who was only walked from the Regent's Park to Shoreditch and back, on the occasion of the threatened Chartist disturbance. I do not mean to say that these horses did not frolic and jump about; the probability is that, coming fresh out of their stables, and full of corn, they did so, and that in some gambol the curb was sprung: I mean, however, to say for certain, that neither horse was galloped or leaped. I have been particular in mentioning these two cases, in order to shew that what is called violence or abuse is by no means absolutely necessary to the production of curb; and that, on the contrary, curb will sometimes arise, purely the result of accident.

THE HOCK MOST DISPOSED TO CURB is the one we designate *the sickle hock*. In proportion as the line drawn from the point of the hock down the back of the leg deviates from the straight line, or, in other words, in proportion as it inclines forwards underneath the body of the animal, so is the hock, by the increase of the angle between the thigh and leg, rendered weak and predisposed to give way: this is especially the case when the thigh happens to be long and lank, as with such conformation of hock it is very apt to be. A horse with such hind-quarters as these is a curby subject, and as such objectionable for hunting or racing, or any kind of work calling for great strength of hock. Added to which, when once such a hock has failed, there exists a constant liability in it to repetition of failure. The best chance of its standing is a reduction of the morbid parts down to that state of thickening and callosity described under the "pathology of curb." This may enable them, when nothing else will, to withstand the force and shock of action. And this it is that accounts for old curbs, although large, not being attended with lameness.

LAMENESS IS A COMMON, NOT A CONSTANT, SYMPTOM OF CURB.—At times, hardly any disease gives rise to more intense lameness than curb; the horse absolutely *walks* lame—seems as though he were literally broken down behind; whereas at other times no lameness is observable; and between these two extremes we may have present any degree of lameness. Usually, a curbed horse is too lame to work, or is kept from work by growing lamer every time he is made to perform it. Repose always benefits his lameness; exercise or exertion invariably does him harm. Many a horse—in particular, a young unbroke horse—shews for curb, who has never evinced lameness, nor seems likely to do so; and more horses still shew curbs which have been treated—either blistered

or fired, and which, in consequence, have become converted into the callous substance before described—of which they are never again likely to go lame.

A curb is reckoned of consequence only in so far as it interferes with the action of the hock or makes it painful, and so far lames or incapacitates the horse; and it is the fact of there being hardly any instance on record of permanent or incurable lameness from curb that induces horse folks to attach so little importance to the disease. From past experience, they entertain a feeling of assurance that, in the end, all will become right again.

THE TREATMENT OF CURB, with a knowledge of the fact of its universal curability; or of its tendency, even untreated, and certainty, indeed, in the course of time, provided the horse be laid up, to cure itself;—I repeat, with a conviction of all this, the treatment may be said to be undertaken under the happiest auspices; indeed, to be undertakeable with tolerable prospects of success by the mere dabbler even in veterinary medicine. Every groom—every amateur veterinarian—can "cure a curb:" still there is a rational and scientific method of procedure in this, as in all other cases, which we rarely see practised but in the hands of the regular professional man.

Knowing that repose, a state of quietude of the affected limb, is most desirable, the horse is not to be turned loose into a box, but to be kept confined in a stall; and that the diseased parts, and others connected with them, the tendons and ligaments, may be thrown into a state of relaxation and ease, a most important aid in treatment is a high-heeled shoe. This done, fomentation of the curb with water as hot as the hand can be borne in it is the best assuasive to a part in pain, and the fomentation is rendered particularly effectual by the employment of the spongio-piline. One piece may be temporarily confined around the hock while another similar piece is soaking in the hot water, ready to succeed the first. This succession constitutes most effective fomentation. A dose of purgative medicine should be given, and it should be an extra-strong one, remembering that the horse will not be able to be moved about to work it off. If we could draw blood, locally, from the part itself, the abstraction would greatly relieve the inflammation present: all that we can do by way of approach to it is, supposing the inflammation to run high and the lameness to be excessive, to open the femoral vein, or else lance the foot of the curbed limb, and draw blood from the toe. It is not often, however, that it is deemed necessary to abstract blood. On the contrary, it not infrequently happens, in a case of curb taken under treatment at the moment of or soon after its occurrence, that the fomentation and

the high calkin shoe, and the physic together, effect a cure, or at least succeed in restoring soundness.

A SPEEDY AND VERY EFFECTIVE MODE OF TREATMENT for what is called by farriers "taking off a curb," is, with the employment of the high shoe, after well fomenting the swollen part, to apply *immediately* to it the *acetum cantharidum* (which has the same effect as what goes under the name of *Leman's essence*). Simply wetting the hair with it by means of a painter's brush, and afterwards tying the horse's head up for the night, is all that is required. In the morning the discharge caused by the vesicatory may be sponged off by renewed fomentation; and this ought to be repeated day by day afterwards for a few days; at the expiration of which, the physic having worked well in the interval, it mostly happens that the horse will be found fit to resume his work. This treatment for hunters, who are very apt to throw out curbs in their work, and whose services are required speedily again, and in as unreduced a state of condition as possible, is particularly in request. It is certainly the most speedy way I know of to remove the lameness of curb; at the same time it cannot be lauded as the plan of treatment most likely to restore enduring or *permanent* soundness.

ABOUT COOLING AND DISCUTIENT LOTIONS nothing has been said, because for the most part they require the application of a cloth or bandage; and this, in curb, is no very practicable matter; else, there is no reason why cold applications and evaporating and discutient lotions should not avail as much in curb as in any other description of sprain; and there are practitioners who make use of them, and efficient use, by keeping the hair over the inflamed parts continually wetted with the lotion employed. Ice, no doubt, would be an excellent application for an inflamed curb, could it be retained upon the part. Use what we may in preference to fomentation—the common remedy for the purpose—any inflammation present in the tumour should be drawn out or very sensibly diminished before we think of applying a blister in the potent form in which it is for curb or sprain ordinarily administered.

Corrosive sublimate dissolved in spirits of wine, in the proportion of ʒj to ℥j, is a favourite remedy with some practitioners; and for slight cases it often answers very well. The hair may be wetted with the solution in the same manner (with a painter's brush) as the acetum cantharidum is recommended to be used; and the part, as soon as the hair has become matted or roughened, fomented. Others there are whose practice it is to form a paste of spirits of wine and pipe-clay, and spread it upon the curb, keeping the plaster continually applied. This is no more than a convenient

mode of applying spirits of wine itself, the pipe-clay being simply the vehicle. The same paste has been found serviceable in capped hock; a part to which any sort of bandage is equally difficult or impossible of application.

A BLISTER is the remedy loudly and universally lauded for curb; and for the practical reason that curbed hocks are found to *stand* after blistering, while they frequently fail after mild treatment. It is easy to account for this. An ordinary blister—more severe than a *sweating* one—and especially if the hair be trimmed off, and the blister be a "strong" one, occupies some considerable time in working off, during which an entire change takes place in the organization of the curb. Any inflammation still remaining in the swelling is altogether superseded by the renewed and violent inflammatory action caused by the blister, and internal as well as external parts become involved in it. The consequence is, that the effusion of lymph is still further augmented, the parts inflamed afresh become agglutinated together, and in the end a general thickening takes place, implicating all around, rendering the curb indurated and callous, little organised, and little subject to any renewal of inflammatory action. By this general consolidation and thickening the motion of the parts, no doubt, is for a time hindered and restricted; by usage, however, the permanent adhesions elongate, giving to the parts they unite, by degrees, looseness and liberty, and so enabling curbed horses, after lengthened laying-up, to perform their work with their wonted effect, and with the advantage of not being liable to fail again in the same parts. I mean after curbed subjects have been efficiently or repeatedly blistered, or fired if thought requisite, and being sufficiently rested.

THE OINTMENT OF THE DEUTO-IODURET OF MERCURY, made by rubbing up from one to two drachms of the red powder of the mercury with an ounce of hog's lard, has proved, at times, an useful application; so much, indeed, has it grown into favour with some veterinary practitioners, that they prefer it to a blister. In 1840 Mr. Wills read a paper on the subject to the Veterinary Medical Association, in which he spoke in warm commendation of the ointment, composed as above stated, as remedial in splints, curbs, windgalls, &c. The ointment may be applied either upon a trimmed or an untrimmed surface, not requiring friction like a blister, nor the head of the horse confining for upwards, at least, of an hour afterwards. A mare was brought to Mr. Willis for opinion, having curbs on both hocks; one of them "large and indurated." The owner was unwilling to have her fired, since that would "blemish her." Mr. Wills thought he could succeed in removing one with the ointment, but was dubious concerning the dispersion of the other. He commenced the red mercurial treatment, and in six

weeks "the curbs had quite disappeared." Mr. Wills thinks that this ointment possesses the additional virtue of promoting the growth of hair*.

IODINE AND COMMON MERCURIAL OINTMENTS, singly or in combination, are employed frequently by horse-dealers and grooms from an apprehension of, from the use of other and more efficient remedies, incurring blemish. Such applications, however, are of very little use when the object is the *permanent* removal of lameness; the ailment being very apt to recur afterwards, supposing it gives way to their employment.

FIRING will certainly be deemed advisable in the case of a curbed horse failing after having been efficiently or repeatedly blistered; indeed may, from the magnitude of the curb or the extraordinary lameness occasioned by it, or from the sickly contour of the hock, be recommendable in the first instance. The scores may be drawn in straight lines over the surface of the tumour; though, more commonly, the back of the hock is fired *feather-fashion.* Thus:

The high-heeled shoe ought to be kept on during the operation of blistering or firing; indeed, the horse for some considerable time afterwards had better be worked in calkins, supposing his ordinary shoes not to be furnished with them; or, if they have, then the calkins now used had better be made of a stronger and higher description.

FAILURE OF CURE, of established or permanent cure, attaches to every remedial measure employed for curb, though in very different ratio. After fomentations and lotions, supposing soundness to be restored by their use, a curbed hock will hardly stand much exertion. Lengthened repose is the only chance that can be given it to right itself again, and grow strong enough to withstand trial. After a blister, curb and lameness will now and then return; nay, on rare occasions, indeed, even after a second and a third blister. Most rarely does relapse happen after firing. I have had occasion to fire twice, but never thrice. Under ordinary form of curb blistering is all that is required to insure soundness; and on that account no horse, unless some unusual circumstances present themselves, should in the first treatment be put to the pain of firing. But when other remedies have failed, there can remain no question of the necessity and superior efficacy of the iron.

* See vols. xiii and xiv (for 1840 and 1841) of THE VETERINARIAN.

THE UTILITY OF TOBACCO SMOKE IN CERTAIN FORMS OF INTESTINAL DISEASE.

By J. W. GLOAG, *V.S.* 11*th Hussars.*

Hounslow, Dec. 5, 1849.

Sir,—IF the following cases of tympanitis are worth insertion in your valuable Journal, they are much at your service. I have selected them for the purpose of shewing the benefits resulting from the use of tobacco smoke in certain cases of intestinal disease (a leaf, by the way, which I thankfully acknowledge to have taken from your book).

If you think the form of apparatus I use possesses any convenience (of which I have inclosed you sketches with a description), you can either make use of it or not.

I am, Sir, your obedient servant.

W. Percivall, Esq.
Editor of "The Veterinarian."

A batch of young horses were fed on bran mashes, with a small allowance of hay and plenty of water, preparatory to physic; and the evening previous to its administration they had an extra allowance of bran mash, and no hay. On the succeeding morning, early, physic was given to each of them (five in number). During that day a double allowance of bran mash, with water *ad libitum*, were allowed, and moderate walking exercise. At night they were again kept short of hay. On the next morning the physic was operating on three of them, but two shewed the following symptoms:—

Seven o'clock, A.M. — They were standing with their heads stretched out, breathing very quick, the abdomen much swelled, and rebounding under the pressure of the fingers. The pulse small and frequent; the membranes lining the nostrils and eyes much injected; frequent shifting of posture, and general uneasiness. I conceived that these symptoms arose from their having eaten their litter, both being ravenous young animals; and that gas had been evolved, which, distending the intestines, pressed on the diaphragm, and thus produced the greatest difficulty in carrying on the circulation; hence the smallness and frequency of the pulse, the injected membranes, and quickness of breathing. As the animals were in physic, I hoped that a diffusible stimulant, with the free use of injections, would soon induce an action on the bowels, and thus get rid of these dangerous symptoms. I gave ammoniæ carb. ʒij, camphor ʒj, and gentian ʒij, in ball; and after having re-

moved some small fæces from the rectum by hand, ordered injections of soapy water to be repeatedly thrown up.

Nine o'clock, A.M.—No relief. Gave aloes in solution ʒv, with spts. nit. æther. ʒj, and one pint of water. At intervals I had the whole extent of the abdomen thoroughly wisped and hand-rubbed, and kneaded by a man on each side; the legs doubly bandaged after being thoroughly hand-rubbed. I tried the effects of exercise, but found it impossible to get the horses to walk, the distress in moving being extreme. Injections were repeated very frequently with Reid's apparatus.

Twelve o'clock, A.M.—One mare had broken out in a profuse sweat; and both shewed much pain and uneasiness, by wildness of the eyes, frequent attempts at lying down, and rising again before the act was completed; looking back at the flanks, shifting of posture, &c. The pulse was 75, and scarcely perceptible. Gave ʒij chloride of lime dissolved in one quart of water.

Two o'clock, P.M.—No relief is obtained. Gave spts. nit. æth. ʒij, tinct. opii ʒij, in one pint of linseed oil, and had the belly rubbed with spt. turp. and oil.

Four o'clock, P.M.—After the administration of the last draught some relief was obtained for a short time, but it was only transitory. I gave chloride of lime ʒij dissolved in one quart of water, and, resolving to try the effects of tobacco smoke, procured ʒj tobacco, the smoke of which was immediately administered as an enema. As the tobacco smoke was sent up the animal seemed to become easier, and whilst continuing it, as the smoke was rejected, it was accompanied or followed by evident disengagement of gas, which could be plainly perceived to differ from that of tobacco. Large rugs steeped in hot water and wrung out were held over the belly by a man on each side. The soap and water injections were discontinued. After the application of the warm water by means of the rugs had been persisted in for an hour-and-a-half, it was discontinued, and the animals dried and clothed warmly.

Nine o'clock, P.M.—Since the last account the aspect of affairs is better. The effects of the tobacco seemed to be that of a narcotic, and for some time after its administration the animal seemed to be in a lethargic state, a subsidence of pain having evidently taken place; the abdomen was, however, still much distended, but I thought somewhat softer than before. I repeated the tobacco in the same dose and with the same effects, the sphincter of the anus being much enlarged during its administration.

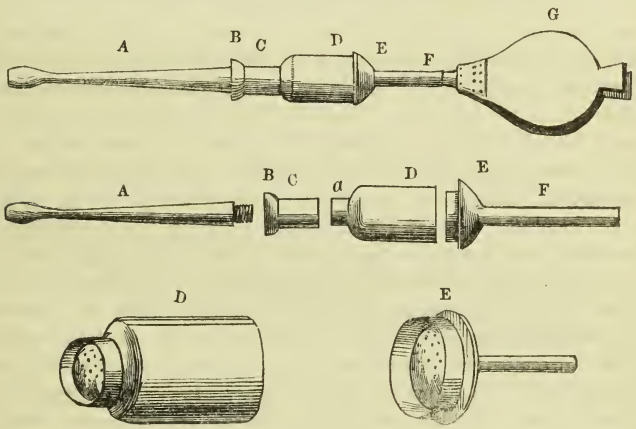
One o'clock, A.M.—The following morning the breathing was decidedly easier, the pulse more natural, and the pain only came at intervals. I again repeated the tobacco smoke, making the third ounce to each.

Five o'clock, A.M.—I found both animals very much better, and, as they were inclined to eat, I allowed them to have a small quantity of sloppy mash. The distention of the abdomen had greatly subsided, and the breathing had become nearly tranquil.

Nine o'clock, A.M.—Some soft dung had been passed, which was a prelude to an action on the bowels, which soon after came on; but purging did not take place to any considerable extent. One animal got well immediately, but the other shewed occasional pain for some days, which was treated by light doses of spts. nit. æther, and occasional injections, and both did well.

Although other agents were made use of in this case besides the tobacco, yet when I began to use it I conceived that the previous remedies had proved inert; and that if relief had not been obtained, and that very quickly, a fatal result must have ensued: I cannot therefore attribute the recovery to any other agent than the tobacco smoke.

Tobacco Smoke Enema Apparatus.



The Tobacco Smoke Enema Apparatus is an instrument about 21½ inches long, consisting of four separate pieces, viz. A, the pipe, which has a screw at its end (measuring 11 inches) inserted into a socket B. This wooden socket is inserted and rivetted into a copper tube, C; this latter tube, with its screw socket, measures 3 inches long by 1½ inch diameter, and its upper part receives the neck of the reservoir, D. This reservoir is also composed of copper, and is of a cylindrical shape, and is intended to receive the tobacco: it measures 4 inches long by 2½ diameter, the neck *a* being about 1½ inch diameter, say rather one-sixteenth of an inch less, being made of sufficient size to fit tightly into the tube C. At the commencement of the neck *a*, and at the bottom of the reservoir D, there is a perforated plate of copper, as shewn in the drawing, convex to the tube C, resembling the drainer of a coffee-biggin.

The reservoir D also receives the cap or lid, likewise of copper, E, which has a rim that fits tightly to the top of the reservoir. This cap has a tube brazed upon it which is sufficiently large to admit of the pipe of an ordinary pair of bellows. In the interior of the lid there is inserted another perforated copper plate, convex to the reservoir D.

The tobacco is put into the reservoir D, and some lighted cotton or wadding dropped upon it, for a few moments, and then the cap placed upon it, and the bellows put in operation; and if any escape of smoke arises it is easily obviated by a portion of wet tow bound tightly round that part. I can state it to be a very effectual apparatus for the purpose, and, from all the parts being so readily got at, it is rendered portable, and is easily kept clean: a pair of bellows can always be obtained.

CASES OF PROTRACTED UTERO-GESTATION IN COWS.

By JOHN TOMBS, *M.R.C.V.S., Stratford-on-Avon.*

I PERCEIVE in THE VETERINARIAN for this month a case of protracted utero-gestation by Mr. Cox, which induces me to relate two similar cases, besides making a few observations on the like subject.

CASE I.—A butcher of this town killed a fat cow in the latter part of November, which he purchased of a neighbouring farmer. He removed from her inside what he supposed to be an indurated tumour. At his request I examined it the day after, and found it was a full-grown fœtus, coiled up quite round. The placental covering was very thin, and like white leather: it was lined with hair. The head was lying back on the right haunch, that part in contact with it was flattened; the fore feet were under the pelvis, and the hind feet close to the sternum. The spine was curved. Putrefaction appeared to have taken place recently. The teeth were as large as a four or five months old calf's; the bones of the head were as solid as a calf's of the same age. She was bought as a barren cow last Michaelmas twelvemonth, and never had access to the male until a few weeks before she was slaughtered. Of course, she was pregnant at the time she was bought: that would make the fœtus fourteen months old, which accounts for the great size of the teeth and solidity of the bones of the head. Undoubtedly, the long retention of the fœtus in utero was attributable to its unnatural position: the singularity in this case is, that she never shewed any signs of parturition.

CASE II.—About two years since I attended a heifer that had labour pains. The vaginal opening being closed, no attempt was

made to extract the calf. A few doses of opiates were administered; the pains in a short time entirely left her. Nutritious food was given her; she soon got meaty, and was sold. I heard nothing more respecting the sequel.

I have seen cases in which cows, after the usual period of pregnancy, have shewed symptoms of approaching parturition, such as distention of the udder, fulness of the vulva, and depression of the glutei muscles, and yet no expulsion of the fœtus, the symptoms mentioned having gradually disappeared. The animals have been fed after, and, when slaughtered, fœtuses were found in the womb, full grown, in a state of decomposition, and invariably in a preternatural position. I have been called to cases in which the fœtus was not fully developed, the ordinary time of utero-gestation not having expired: symptoms of abortion were manifest. On examination per vaginam, I discovered only the bones partly in the vagina and partly in the womb (the flesh having putrefied and passed away unobserved), some loose, and some with their ligamentous attachments. Upon extracting them they caused excruciating pain, particularly the bones of the spine when passing through the vaginal passage.

A long experience in cattle practice has proved to me that cows are more especially predisposed to these lengthened terms of pregnancy than mares: probably some of our eminent practitioners at head-quarters will tell us the physiological reason.

P.S.—To further the ends of science, I acquaint you that other medicinal agents will cure tetanus as well as chloroform; not but what I am pleased to see its potent effects successful.

Illustration.—A half-bred mare in August last, which had a colt by her side, was attacked with this formidable enemy, idiopathic tetanus, the symptoms of which are too well known for me to state here. I bled her moderately; then applied Barb. aloes, mixed with treacle and flour, to her tongue with a very thin flat stick, frequently. Purging took place in twelve hours, during which time three ounces of aloes were given. I then gave her repeated doses of nux vomica by the same means, frequent tobacco injections, and used powerful applications to the spine and abdomen. These means effected a cure in a week.

Dec. 10, 1849.

DISTEMPER IN DOGS.

By Mr. BOUGHTON, *Veterinary Surgeon, Hounslow.*

Sir,—SHOULD the following cases of Distemper in Dogs possess any interest for your valuable Journal, they are much at your service.

I have the honour to be your obedient servant.

W. Percivall, Esq.

Early in November last, I was called to look at four greyhound puppies, belonging to K. R. Peel, Esq. They were about nine months old, very high-bred, and, until a week previous, had been going on well. They were stated to have been at that time in excellent condition and spirits; but since then had fallen away very much in flesh, had become very much relaxed in their bowels, and very dull. Their general appearance shewed weakness. They had little inclination to move; their noses were hot; and two of them had discharge from the nose and eyes, with dry tongues, breath hot, and of an unpleasant smell, though not fœtid. These two were also purging very much, and looked sadly tucked up. I first separated the puppies, placing them two and two, according to the intensity of the disease, in separate comfortable warm stables, allowing them plenty of straw. I considered that they were affected with distemper of a very virulent character, and from their high breeding, their so quickly falling off in condition, and their prominent symptom, diarrhœa, I had the worst forebodings as to the result. Having had opportunities of making observations on very many such cases, I have generally found them unmanageable.

Three of the puppies had the distemper in the spring, and were under my care; and the fourth was said to have had it when away from the rest. At that time they suffered very slightly, and speedily got well. I have frequently found dogs to be attacked a second and even a third time with the disease.

First Day.—I gave a gentle dose of sulphat. magnesiæ to each of the two worst cases, with the intention, primarily, to get rid of any irritating matter which might in any way keep up the purging; while to the other two I gave calomel 1½ gr., with emetic tartar 1 gr.

Second Day.—The two worst cases remain as yesterday. They are to have two pills each twice a-day, containing, together, powdered chalk ℈j, catechu gr. x, gum. opii ¼ gr., with ol. anisi,

M. viij, and to have injections of gruel, containing some powdered chalk, and a few drops of tinct. opii, every four or six hours. The other two puppies to have a mixture containing camphor, with spts. nitr. æth. cum confection. aromatic. in chamomile infusion, twice a-day. All the dogs to have good fresh cooked meat, or strong beef tea, with coarse bread soaked in it, as often as they can be induced to take it.

Third Day.—The two worst cases are going on badly; the purging sadly increases; the fæces are of a dark grey colour, fœtid and slimy; and the discharge from the nose of each dog has become much thicker, and adheres round the borders of the nostrils. The eyes, too, are inflamed, and are discharging thick mucus; added to which, both puppies have a husky cough. The medicinal treatment to be continued as yesterday. The other two cases are purging rather more than yesterday. To take decoction of bark, with chalk mixture and tinct. opii, occasionally during the day.

Fourth Day.—No amendment in any of the cases. All four dogs to take a mixture I frequently give, composed of kino comp. catechu, tinct. opii, and decoction of oak bark with port wine, in thick arrow-root or good gruel. Every endeavour is to be used to induce the dogs to eat, and that failing, they are to be drenched with strong beef tea, when cold, or jelly: varieties of food tried to tempt the appetite. The discharge from the nose and eyes is much increased in two of the dogs, and one dog has partial twitchings of the muscles. The eyes and nose to be frequently sponged with lukewarm water, and their heads to be often held over the steam of warm bran, to endeavour to free them of the offensive discharge.

Fifth Day.—Two of the cases are very much worse. The purging in them is very frequent, and the discharges are of a black grumous consistence, of an offensive character. One of these dogs shews ulceration of the cornea of both eyes, with twitchings of the legs, and staggering gait; the other has had decided fits, and both are only partially sensible. I considered their cases hopeless; nevertheless, I continued the medicinal treatment as yesterday.

The other two dogs were very little different from yesterday. The bowels are relaxed, but more under control; they are, however, losing flesh, which is a very bad sign; added to which, the discharges from the nose and eyes have become augmented in quantity and viscidity.

I do not consider there would arise any utility from following out any further the daily appearance the dogs presented; let it suffice to say, that I changed my remedies, prescribing in turn every astringent, while I had them supported by giving them

beef tea, and in every other way that could be thought of. The first dog died on the seventh day; and in his case the intestines seemed to be the principal seat of disease. The second dog died on the ninth day, the third on the twelfth, and the last on the eighteenth day; and, since they presented after death somewhat different appearances, I shall append their post-mortem examinations.

THE FIRST DOG, I regret to say, was not carefully examined. The brain, cavities of the head and heart, and the lungs, were not inspected. The discharge from the head was very thick and copious, and both eyes were ulcerated. On opening the abdomen, the bowels were found to be in an intense state of inflammation, filled with mucus and dark offensive fæcal matter.

THE SECOND DOG was carefully opened in the presence of Dr. Chapman, of this town, who, from the virulent nature the disease had assumed, had taken a lively interest in the cases.

Head.—A quantity of pus was collected in the nasal and frontal sinuses, and in the ethmoidal cells, and also upon the membrane lining the nose. The fauces, glottis, and epiglottis were highly inflamed, and secreting a viscid purulent fluid.

Brain.—The bloodvessels were much distended with dark blood; but we could not detect the existence of any unusual quantity of fluid in the ventricles.

Trachea, Heart, and Lungs.—The upper part of the trachea was much inflamed; but on continuing the examination into the chest, the lungs were found to be free from active inflammation, as likewise was their investing tunic and the lining of the chest: these were perfectly free, indeed, from disease.

Abdominal Viscera.—We found great inflammation at the commencement of the œsophagus. The stomach was much contracted, and exhibited patches of inflammation over the greatest portion of it. The intestines were inflamed from one end to the other; but the inflammation was most severe at the extremities; that is, at the commencement of the œsophagus and within the rectum and anus. In the rectum the mucous membranes were nearly destroyed. The contents of the bowels were dark liver-coloured, and smelled offensively.

The Liver and Kidneys were much softened.

Looking, in an abstract view, at the condition of the alimentary canal, seeing the dark patches of inflammation here and there, in the absence of other symptoms, one would have imagined that the dog must have taken some acrid or poisonous substance.

THE THIRD DOG was examined in presence of Dr. Chapman and Mr. Gloag, V.S., 11th Hussars.

Head.—On slitting up the nostrils, the lining membrane on each side was found to be much inflamed, secreting a thick pus, which

adhered around the nostrils. The nasal and frontal sinuses, and the ethmoidal cells, were found clogged up with thick pus; and the lining membrane was thickened and inflamed. Continuing our inquiry along the trachea, the lining membrane, together with those of the larynx and fauces, were likewise found to be very much inflamed, and to be secreting similar viscid matter.

Eyes.—The corneæ of the eyes were ulcerated, there having been a copious secretion of viscid matter from both of them. One peculiarity attended the ulceration of the corneæ—the lesions were directly in the centre, and were perfectly circular.

The Brain.—The investing membranes proved much inflamed, with congestion of blood in their vessels, and a considerable quantity of serous fluid of a much higher colour than in health, made its escape, apparently from the base of the brain. The ventricles were found empty. The substance of the brain did not look unhealthy.

Chest.—The lungs were pervaded by a yellow tinge all over their external surface, which we could not account for, excepting that the gall bladder was, at the time we examined the abdomen, found to have burst, which might have accounted for the tinge the lung possessed. The pleura costalis and pulmonalis were both healthy, and the secretion of the serous lubricating fluid was normal in quantity and quality. The left lobe of the lungs was healthy; but the right was much diseased. Externally, this last had a mottled, marbled aspect, presenting raised dark spots. On cutting into its substance, we found it to be pervaded by similar ecchymosed spots, which might, perhaps, have been the commencement of tuberculation.

Heart.—This organ appeared healthy.

Abdomen.—The liver was very much softened, and very friable, so that you could almost pass your finger through it.

The Gall Bladder was burst, and this had given a yellow tinge to the intestines.

The Stomach contained a quantity of straw and hay, with a number of worms. The hay and straw had probably been taken in along with food during delirium. The lining membrane was healthy.

The Small Intestines shewed very great disease. There was a copious secretion of yellow mucus, with here and there patches of inflammation. The large intestines appeared to be more healthy than the small; still these latter were very much diseased, and contained liver-coloured offensive fæcal matter.

GENERAL OBSERVATIONS.—On account of this animal, from the intensity of his sufferings and the fits he from time to time was subject to, having been, as an act of humanity, put to death

by bleeding, the indications of inflammation in the various organs would not turn out so striking as if this had not been done.

THE FOURTH DOG, up to this day, was apparently recovering, and was beginning to feed. The discharge from the nose and eyes had somewhat subsided, and the purging had become considerably abated; when, all at once, it was found that the purging having quite stopped, the dog became unconscious, and lost the power to lift himself from the ground.

Head.—The general appearance of the lining membrane of the various cavities and cells shewed a decided improvement.

The Brain appeared healthy.

Chest.—Heart and lungs likewise perfectly healthy.

The Abdomen quickly explained the cause of death. Intussusception of the ileum had taken place for more than a foot in extent, reaching close up to the pouch of the cæcum. The parts were perfectly strangulated. This had been caused, no doubt, by the increased peristaltic action of the bowels; and I am of opinion that, if this accident had not occurred, this dog would have recovered.

CASE OF POLYPUS IN THE VAGINA OF A COW.

By W. A. CARTWRIGHT, *M.R.C.V.S., Whitchurch, Salop.*

ON the 29th October, 1849, I was sent for by Mr. John Furber, of Prus Heath, to see an aged cow of his that was said to have her "bulk" down. She had calved on the 24th instant, and there was then no appearance (nor had there been at any former period) of any tumour projecting from the vagina. On the 26th it was first seen, and from that date to the present it had been frequently forced back, but soon again had made its appearance.

I found her grazing in the field very heartily, and had her driven into the cow-house for examination. At the mouth of the vagina there was a large tumour, completely filling up the passage. The posterior part of the tumour was of a brownish tinge, being, as it appeared, discoloured by the fæces. The swelling was six inches in diameter. About its neck it was very vascular. To ascertain its nature, I introduced my hand up the vagina, and found that it was a large polypus, situate at the lower side, at the distance of about four inches anterior to the meatus urinarius. I could introduce my finger into the meatus, which did not seem the least obstructed; though, of course, the tumour must have pressed upon it, more or less, at times. For its removal, I could see no better

plan than to fasten a ligature around its neck, which proved about two inches in diameter. I therefore waxed a piece of twine, and tied it upon it as close as I could, and left two doses of opium to be given in case much straining supervened.

Nov. 1.—The polypus is protruding; and I think it hangs out a little more than it did. The vagina has become so tender that she will scarcely permit me to introduce my hand into it. Voids her urine in small quantities, and with some little difficulty. Is hearty, and looks well. As the ligature has grown rather loose, I applied a fresh one upon the same place.

7*th.*—The neck of the polypus, where the ligature is fastened, is fast diminishing. I attempted to amputate it; but finding hæmorrhage taking place, I desisted, thinking it more prudent to apply another ligature.

11*th.*—The tumour seems quite dead, and is of a brown colour. The neck now being considerably reduced, I cut through it, and it bled but little. I afterwards passed my hand up the vagina, and found there was a good deal of thickening at the place where the polypus had been attached; but which I fancy will soon subside, now the tumour is removed.

The polypus measured six inches in length, four in diameter, twelve inches in circumference, and weighed twelve ounces.

AMPUTATION OF THE PENIS IN A GELDING PONY.

By the same.

On the 12th November, 1849, I was requested to see a pony, eighteen years old, the property of Mr. Edward Tudman, wine merchant, of this town. His farrier had been dressing the end of the penis for some time, and this day he cast him for that purpose; but, finding it in a very bad state, I was hastily called in to see him, and I gave it as my opinion that nothing would be of any service to him same amputation, seeing the parts all around the glans penis were scirrhous and cancerous: there were numerous irregular excrescences; added to which, the urethral opening was very unhealthy, and in an ulcerated state. In the afternoon I operated on him.

Operation.—We cast him, and placed him upon his back, separated the off hind leg from the hobbles, and drew it forward by a side-line out of our way. I then drew out the penis to its full extent, and applied a ligature of tape around it, at about six inches

up it; I found, however, that the penis slipped through this, so I applied another, nearer to the extremity. I now got an assistant to grasp the penis so that it should not retract when I attempted its removal. I plunged a sharp-pointed bistoury through its centre, and separated one-half of it, and applied the cautery to its surface: I then separated the other part, and applied the cautery to it likewise. Afterwards I took the tapes gradually off; but finding that a little blood oozed out, I re-applied the cautery, and then loosed the penis, which immediately withdrew itself into its sheath. He was now released from the hobbles, and got up, when it was seen that blood issued more freely than before from the parts. I had him walked home to his stable, and when there it continued to bleed for two or three hours at a gentle rate, so that, altogether, I should think he lost about three quarts of blood. Soon after he got into the stable he urinated very freely, and, in the act, the point of his penis was gently protruded whilst it was bleeding. I gave aloes Barb. ʒiiiss, ordered a restricted diet, and that he be kept cool.

For the next day or two he continued, at intervals, to bleed a little, especially after urinating, though nothing of moment.

Nothing more was done to him. In a few days after he was turned into the field, and is now perfectly restored.

CASES OF TENOTOMY, TRACHEOTOMY, EXOMPHALUS, AND ANASARCA.

By Mr. MARSHALL, *Veterinary Establishment, Dungannon.*

Sir,—IF you consider the following cases, as abridged from my case-book, worthy of a corner in the next number of THE VETERINARIAN, you will please give them insertion. The case of tenotomy is worthy of remark only from the length of time that had elapsed since the operation was performed, and the circumstance of the horse continuing to remain firm on the leg: at least, so he did a few weeks since, when I last saw him. The cases of exomphalus seem to deserve attention, as shewing the success of a simple mode of treatment; while those of anasarca evince the efficacy of the hydriodate of potass internally administered.

I remain, Sir,

Your's faithfully.

To W. Percivall, Esq.

CASE I. *Division of Tendon.*—The subject was a brown gelding, the property of Mr. Thomas Lilburn, of the Ranfurly Arms

Hotel, in this town. He had been fired on both fore legs; notwithstanding that, however, he became so much worse, and knuckled over on the near fore fetlock to that degree, that I advised a division of the tendon, to which Mr. L. assented, the horse being all but useless to him. On the 2d of August, 1842, I operated. After returning the leg into its proper position, I brought the divided edges of the integument together by two sutures, bandaged the leg from the pastern to above the knee, and applied a shoe projecting about three inches behind the heels. The bandage was kept constantly wet with cold water, and not removed for ten days. The healing process went on favourably until the cure was completed. He is now in the possession of Mr. Wm. Lee, farmer, residing a few miles from this town, to whom Mr. Lilburn sold him. Mr. Lee works him on his farm, and occasionally in his jaunting-car. He has remained firm and straight upon his legs, although it is now upwards of seven years since he was operated on.

CASE II.—*May 19th*, 1843.—I was this morning called in haste to a bay mare, the property of John Falls, Esq., of the distillery in this town; and, from what I was told by the groom as to the state the mare was in, I took with me my case of scalpels and my tracheotomy tube. When I got to the stable, I found the mare in great distress from extensive tumefaction of the parotid and submaxillary glands. Her nostrils were dilated to the fullest—the breathing was so loud and sonorous, that it was audible at some distance before reaching the stable—the countenance denoted extreme anxiety, shewing evidently that, if the animal were not speedily relieved, she must suffocate. I learnt that she had been under the care of the groom, who had blistered her two or three times. I lost no time in making an opening into the trachea and removing a portion of two of the rings, and inserting my tube. The relief, as is usual in such cases, was instantaneous.

20th.—Applied a blister to the swollen glands, and, at the expiration of twenty-four hours, a poultice.

22d.—Repeated the blister and poultice as before.

24th.—Suppuration perceptible at the angle of the left jaw. Lanced the part, which gave exit to a great quantity of pus. Continue poultice. Her principal support consisted of gruel and linseed infusions, in w. ich she now took, twice a-day, a powder composed of nit. potassæ, tart. ant. and hyd. chlor. Suffice it to say, she rapidly recovered, the swollen glands becoming speedily reduced through the application of the ung. biniod. hyd. She has since brought up two foals, and has obtained the first premium as a brood mare at the annual show of the Dungannon Agricultural Society.

CASE III.— *Sept.* 16, 1843.—A thorough-bred chestnut colt, by Lord John, the property of Mr. T. Lilburn, was placed under my care, having an umbilical hernia, the largest I have ever seen in so young a subject, he being only six months old.

I cast him, placed him on his back, and returned the protruding intestine. I then applied a clam over the loose sac of integument, in as close proximity to the abdomen as possible. That done, I allowed him to rise. I ordered him to be kept in a loose house, and gave a lotion with which the parts were to be bathed three or four times a-day. After the lapse of a few days this was changed to an astringent lotion. There occurred no unfavourable symptoms. On the 29th, the tumour separated, leaving no appearance of hernia; there remaining only a small seam the length of the clam, which soon disappeared.

CASE IV.—*Dec.* 4, 1848.—A year-old chestnut colt, the property of Mr. Robert Cardwell, farmer, near this town, was placed under my care, having an umbilical hernia. I adopted the same mode of treatment as in the former case, and with the same success.

CASE V.—*July* 7, 1849—A black colt, two years old, the property of Mr. Richardson, farmer, near this town, was subjected to the same treatment, in consequence of having an umbilical hernia, and with the same success as in the two former cases.

ANASARCA, THE SEQUEL OF INFLUENZA.

CASE VI.—*Oct.* 29, 1849.—I was this day requested to see a black carriage-horse, the property of R. W. Lowry, Esq., at Pomeray House. I was informed that several of Mr. Lowry's horses had recently had influenza, this horse being one of them. It was thought, however, that he was nearly recovered; until, on going into the stable yesterday morning, he was found greatly swollen. On visiting him, I found the near hind leg as high as the perineum, the off fore leg outside of the shoulder, and the breast as high as the lower part of the neck, enormously swollen; likewise the nostrils, the tumefaction of which extended half way up the nasal bones. The Schneiderian membrane was blanched, and there was perceptible a little discharge of white matter. The pulse was quick and full, such, indeed, as would, in any other complaint, have indicated the use of the lancet; yet was I convinced the system could not bear the abstraction of ever so small a quantity of blood. I commenced treatment by scarifying the swellings, and ordering fomentations, frequent and long-continued, with walking exercise three times a-day; also a nutritious diet, such as scalded oats, bran, carrots, &c., according as he might fancy. On

my return home, I sent him some tonic diuretic balls, each containing a dose of pulv. lyttæ; one to be given daily.

Nov. 5.—I received a note to-day, informing me the swelling had extended to his sheath, completely filling the space between his thighs; and that the integument had sloughed for a space about the size of a hat crown at the back part of the thigh. I sent a further supply of the tonic diuretic medicine, to be given every morning; and in the evening I ordered that he have a dose of hydriodate of potass dissolved in a little water.

8*th.*—Visited him to-day; found the sheath had sloughed all along the off side, from which came a great deal of discharge; and the *inside* of the near thigh as well. Moreover, there is an opening into the front of the stifle, from which issues a glairy discharge. The swelling has left the fore parts, and is much reduced in the hind leg. It is moving forward along the abdomen from the sheath, and is altogether gone from the nostrils. I directed the parts that had sloughed to be frequently washed with a solution of chlor. calcis, and the same medicine to be continued; also, to be allowed a small quantity of hard oats daily.

14*th.*—He is very much improved; the swelling is all gone, with the exception of a little under the abdomen. I told the owner that my attendance was no longer necessary. I have heard of him several times since, and understand he is in fine health and spirits.

December 12, 1849.

VETERINARY JURISPRUDENCE.

By T. D. GREGORY, *M.R.C.V.S., Bideford, North Devon.*

Sir,—I WAS somewhat surprised, on taking up the last number of your Journal, to find my short note of the 10th of last August, after having been laid aside for three months, brought forth to form the subject of a lengthy editorial article. Yet I do confess the pleasure I felt far exceeded the surprise. Not that I am at all ambitious that my name should be so prominently placed before the profession. I would rather, much rather, the more proficient pen of a man of greater standing, and one better known, had been the instrument of calling forth your opinions upon the subject of veterinary jurisprudence. But, since it has been my good or ill fortune to have so attracted your attention, I feel I cannot do less than overcome my repugnance to public notice by again addressing

you upon this very important subject. It is a crying evil; it demands every attention. And if we can devise no means to prevent such disgraceful scenes being enacted, let us at least raise our voices of censure against the evidence of ignorant and totally unfit and unqualified men (calling themselves "veterinary surgeons") being taken in cases of veterinary jurisprudence. It is bad for men to be robbed of their pounds, shillings, and pence, in actions at law; but it is far worse for them to be deprived of their liberty, and incarcerated in a common gaol by such evidence. In proof of what I assert, I will give you the heads of a case that occurred in a court of justice(?) in Devonshire during the past year.

A farmer's servant was at work with his master's horses at plough. In the evidence it was stated, that on a sudden one of them (which a short time previous had been under some kind of medical treatment) stopped in its work, and trembled; and on its being urged forward, fell, and in a few minutes expired. The owner, on being apprised of the accident, sent for two men to examine the animal. One was styled a "veterinary surgeon," the other a saddler. They made what was called "a post-mortem examination," and said they found the vein of the neck had *cracked*, as through the pressure of some blunt instrument, and that *gangrene water* was to be seen under the skin. The farrier had no doubt this was the cause of death, and that the driver had inflicted the blows. He examined no farther. No account was given as to the appearances presented by the organs necessary to life. The animal may have died from apoplexy, from rupture of some important bloodvessel, or from any one of many other causes which are known to produce sudden death. The extravasation of blood or serum about the jugular vein, I should be of opinion, was the effect of bleeding during the animal's previous illness.

For the defence, the man's fellow-servant swore he was also at work in the same field, and saw no blow struck, or other ill-treatment inflicted, upon the mare at or about the time of her death. Yet, in the face of this, and upon the absurd evidence of the farrier, the magistrates *committed the man to the gaol at Exeter for three months* for "killing" her*. Is this the justice that Englishmen boast of administering and receiving?

The case was commented upon by a correspondent, signing himself "Judex," in the next week's *Western Times*. The writer condemned the magistrates for placing undue faith in the science of farriery: mark, the SCIENCE of *farriery!* He, as a non-professional man, did not inquire whether Reed was a qualified veteri-

* The case was heard at Woodbury Petty Sessions. The so-called veterinary surgeon's name was *Reed;* and amongst whose other qualifications he could neither read nor write.

nary surgeon! No! he took it for granted he was so, and that our science was as defective as the fellow's evidence. I felt I could not suffer the profession to be thus publicly stigmatized, and accordingly answered his letter (a copy of which I transmit you). In it I endeavoured to point out the difference between the qualified and unqualified. The editor, from some unexplained cause, omitted to insert my reply.

Do not such proceedings as the above call loudly for "something to be done?" What is that something to be? You write thus—"The only equitable and at all satisfactory mode, as it appears to us, in which this difficulty could be overcome would be to draw a line, back to some agreed-on period of time, and enact that practitioners in farriery in practice before that time should be admitted as qualified evidence; but that, from and after the said date, every person appearing in court to give evidence on veterinary matters should be required to produce a diploma of qualification from one or other of the veterinary colleges." With this plan you will pardon me when I say I cannot agree; some reasons for which I will endeavour to state. We will admit there are many respectable, honest, and industrious men who practise veterinary surgery without diplomas, to whose evidence we could offer no objection. But, where you find one such man, you find scores that are ignorant, depraved, and illiterate; many belonging to the very lowest grades of society, without a spark of honour or upright feeling, who will stoop to any artifice, and have recourse to the most diabolical means to gull the unsuspecting and credulous with their nostrums and charms.

From the high position you have always held, Mr. Editor, as an army veterinary surgeon, you can have had but few, if any, opportunities of being personally thrown in contact with this lower class of practitioners. You may think my remarks are severe; but the unfortunate members of the profession whose hard lot it is to be located in agricultural districts, where the holdings are small, know it to be an "o'er true tale." For there these pests abound. We see the farmer constantly robbed of his suffering animals by the grossest maltreatment. On expostulating with them, as I have myself done, upon the folly of continuing to employ such men, how has my advice been received? They turn upon me, and say, "two of a trade never agree!" Can you believe, Sir, that any of your professional brethren are exposed to such indignities? Is it not sufficient to make one wince to the purpose, to be placed on an equality with the men possessing the most unblushing effrontery, coupled with the most egregious ignorance? Now, Mr. Editor, if the plan you propose was adopted, we *must* meet them in courts of justice as brethren; we *must* lower our own professional cha-

racters to elevate theirs. Should we, by so acting, be doing justice to ourselves and the public? No date that you could commence from would have the effect of excluding them. Numbers of them are as old as they are ignorant. Their age increases their presumption. Suppose you date back twenty years;—you would shut out those undiplomaed who, we will say, are really deserving men, that have commenced practice within that period. Since, then, we cannot by this plan do justice to all, I would, with deference, suggest we rather leave it to the onward march of improvement and the increasing intelligence of the people. By rendering ourselves more and more deserving their confidence and support, endeavour to enlist the sympathies of the public press in our cause. When a flagrant case does occur, let some professional man in the neighbourhood expose it, by devoting a little time in writing and forwarding his opinions to the editor of the nearest newspaper whose columns are generally open to public grievances. And in order that the magistrates and judges of our local courts should be enabled to ascertain who are the qualified members of the profession, let us in each district (as have been proposed before by some gentlemen) advertise, at least once a-year, in the local papers, the names of the members there residing, with the date of their diplomas.

These are my views upon the subject: if they are worthy of adoption, I leave them in your hands to forward as you think fit. I had intended to have made some few remarks upon another portion of your article, but I fear I shall trespass too much on your time and space; I will therefore leave it until a future time and opportunity. In conclusion,

I beg to remain your's respectfully.

The Editor of The Veterinarian.

*** In the course of years, as veterinary science progresses, and as the public—the agricultural more especially—come to be more alive to its advantages and intelligent to the merits of its practitioners, there can be little doubt but the evil will work its own cure: we are much afraid, however, as times are going with the farmers, it will take many years to effect this cure. Legislative enactment would cut the period short; and, besides, would be attended with this advantage,—that, as soon as they found themselves without the pale of the law, there would be an end to the *propagation* of the professors of farriery; they, or their sons at least, would then, of necessity, all become veterinary surgeons. We shall be glad to hear further from Mr. Gregory on the same subject.—Ed. Vet.

DISEASE OF THE TEETH.

By "CAUSTIC."

Sir,—I HAVE just concluded the perusal of Mr. Mayhew's valuable work on "The Horse's Mouth, shewing the Age by the Teeth." I am sure the members of our profession are deeply indebted to its author for his persevering researches into that hitherto neglected department of veterinary science: it has earned for him a lasting reputation. I hope, I feel no reason to doubt, that, even in a pecuniary point of view, he will be benefited.

I know Mr. Mayhew too well to think for a moment that he will consider what I am about to notice as an attempt to detract from the merits of his work. At pages 144 and 145 of his Manual, he points out irregularity of the molar teeth as a serious disease, from its being the cause of an accumulation of food in the interspaces between them. The gums inflame, the animal falls away in condition, and in some cases, doubtless, the consequences may lead to destruction of life. With this I fully concur. But, with regard to the treatment of such cases, he appears in this solitary instance unable to assist us; I therefore venture to make known to him and your readers the method I adopt under such circumstances. With this view I select one case from among many in illustration, in hopes that it may be found of service in practice.

July 14*th*, 1849.—A remarkably fine grey wagon-horse, six years old, was sent to my infirmary, with bad eyes. They informed me he had lately fallen away in condition; had little appetite; was very weak and dull at work, and for the last week had had an affection of the eyes. I found he could see but little; that the membrana conjunctiva was inflamed; and that there was great intolerance of light, weeping of the eyes, drooping eyelids, and that peculiar triangular appearance of them observable in periodic ophthalmia. The pulse high, and of a character indicative of pain.

According to my usual practice in occult disease of the eyes, I made a careful examination of the teeth—a plan, by the by, I have had no reason to regret—and discovered a large cud of hay firmly impacted between the two posterior molar teeth on the near side of the lower jaw, occasioned by the irregular formation of the same. I with great difficulty removed the offending agent, and then found that a large hole had formed between the body and fangs of these teeth. The stench from this aperture was very bad; chemical action was going on; the pressure must have been great;

so great, indeed, that, had it not been removed, doubtless, serious injury of the jaw-bone and fangs of the teeth, and, I believe I may add, loss of eyesight, would have ensued; and perhaps death of the horse as a sequel.

After having well washed the mouth with water, I inserted a piece of gutta percha, previously softened by boiling water, moulding the same well into the part, and so completely filling up the cavity, and preventing any farther accumulation of food. The subsequent treatment consisted in the administration of a gentle aperient, and the application of warm water to the eyes, with a cooling diet. In the course of a few days the eyes became quite restored, exhibiting no signs of previous disease. The horse gradually regained his former blooming condition, and has continued to do well up to the present time. The gutta percha became gradually pressed out as Nature restored the parts to their normal condition.

Your's respectfully.

REVIEW.

Quid sit pulchrum, quid turpe, quid utile, quid non.—Hor.

Recueil de Mémoires et Observations sur l'Hygiène et la Médecine Vétérinaire Militaires, *rédigé sous la Surveillance de la Commission d'Hygiène, et publié par Ordre du Ministre Secretaire d'Etat au Departement de la Guerre.* Paris, 1847.

Memoirs and Observations on Military Veterinary Hygiene and Medicine, *compiled and arranged under the Superintendence of the Sanitary Committee, and published by Order of the Secretary at War.* Paris, 1847.

[Continued from vol. xxii, page 696.]

We feel unwilling to quit the important subject we little more than broached in our last Number, viz. "The Alimentation or Feeding of Horses," and leave behind us some experimental results, tending to disturb long-established theory and practice, founded thereon. We have, therefore, this month resumed the volume

we so cursorily looked into, last; not with the view of setting forth our faith in what we are going to detail, though we are quite ready and willing to concede to our neighbours beyond the channel every credit, and our humble thanks too, for taking so much pains, as they evidently have done, to come at the truth of what appears set down as matter of fact too firmly rooted by custom to give place to any novel facts which might suggest any other mode of feeding horses. We must have *hay, corn,* and *straw,* or corn, hay, and straw. These constitute the three cardinal forages or horse-meats, or, rather, two of them do; the third kind being intended to serve the animal as litter for bed; albeit, now and then, it happens that horses "eat their beds," and in preference, too, to the hay set before them. In the inferences drawn, in the work before us, from feeding horses on hay and straw, either in combination or singly, we may take occasion here to remark, that the hay in France is by no means of a quality comparable, as we believe, with our own; and that on this account due allowance must be made for the low estimate it will be found in the "reports" before us to be set at, relatively to the alleged nutritive virtues of wheaten straw.

Hay.

The ANALYSIS OF HAY of good quality grown in different localities varies in no appreciable degree. Regarding hay as the farmer's staple horse-food, we may represent its nutritive equivalent by 10.

Straw.

The ANALYSIS OF STRAW of good quality has shewn its representative nutritive value to be, as compared with hay at 10, 33·12; by which is meant, that it will take so many lbs. of straw to nourish equal to 10 lbs. of hay. Oat, rye, and barley straw, present much the same equivalents as wheat straw; they may be severally estimated at 33·12. The sample of straw examined, and which was found to be estimated at 30, yielded 8·12 per 100 of normal water. There is little doubt that the wide differences observed in the substantive ingredients of straw (one analysis representing them as 15, another at 50) have in part arisen from the dryness, more or

less advanced, of the several kinds or conditions of the straw they have experimented on. Examined immediately after harvest, there is straw which contains as much as 26·00 of moisture.

It is a well-known fact, that, in plants arrived at maturity, the part richest in azote, and consequently the most nutritive, is the seed; but a fact of not less value to us is, that of the entire plant the most azotized parts are those contiguous to the seed. According to which principle there ought to be a great difference in nutritive value between the different parts of wheaten straw. If, therefore, in the experiments made by feeding on straw, that which was given proved to be short or mixed straw, or such as had been deprived of most of its ears, an unfavourable result would be obtained: and if, on the other hand, after having given an abundance of straw, we were to estimate the weight consumed by the quantity (by weight) left, a too favourable result would be put down; animals standing up to their knees in straw never failing to select the ears and parts of the stalks around them.

With a view of ascertaining the difference, in nutritive quality, between the superior portion of the straw and the entirety of the stalk, one-third of the length of the stalk of wheaten straw, comprising the ear, was examined; 9 was found to be its equivalent in nutritive property: whence it results that the nutritive value of the superior extremity of the straw-stalk is at least equal to that of good hay. It may be added that, on the strength of this analysis, at a large farming establishment in the eastern part of France, during the last winter, horses have been fed on the tops of the straw with the best advantage.

Oats.

According to analysis, oats have varied in equivalent (to hay at 10) from 5 to 7. We may, therefore, set them down at 6, the water of composition varying between 13 and 15 per cent.

Bran.

The bran examined contained 14 per cent. of water. Variation in its component water will operate upon its equivalent. Taken at a mean, it may be set down at 7.

Barley.

In grain, barley may have its equivalent represented by $5\frac{1}{3}$; barley meal, by 5.

In accordance, then, with the results of the foregoing chemical analysis and with the facts collected from the feeding of herbivorous animals, we may, as the equivalent of the forage supplied for cavalry horses, set down the following :—

Hay . . . 10,	substituted by	Straw	$33\frac{1}{2}$
		Oats	6
		Bran	7
		Barley	$5\frac{1}{3}$
		Barley meal . .	5

Determining the commutation of forage by this scale of equivalents :—

1st. For every 100 of hay should be allowed 335 of straw.
2dly. . . . . 100 of oats . . . . . 89 of barley.
3dly. . . . . 100 . . . . . 83 of barley meal.
4thly. . . . . 100 . . . . . 117 of bran.

In fixing the substitute for 100 of hay at 200 of straw, the relative prices—hay being double that of straw—appear to have been had regard to rather than the nutritive qualities. Estimating articles of forage by their price in conjunction with their nutritive properties, we find the dearest provender to be straw. Regard to these considerations might make it advisable to commute a part of the corn for hay; or two parts of the straw for one of hay, providing the litter would admit of such abstraction.

In conclusion, it is our opinion,

1. That the substitution of corn for hay, within the limits fixed by the Committee, must prove advantageous to the nutritiveness of the horse's ration.

2. And that if we could, without damage to the litter, commute two kilogrammes of straw for one of hay, the ration also would be sensibly increased in value.

3. The equivalents of the present Report are those to be preferred for the purposes of commutation.

4. That it would be desirable to introduce into the army the

practice of weighing horses, by squadrons, with a view of throwing light, in particular, on the effects of different dietaries, and, in a general way, on the actual state of health.

In making this report to M. Marshal the Secretary-at-War, the Committee suggested that some direct experiments be made, by means of which it might be possible to ascertain, with certainty, the real nutritive value of the different forages composing the (troop) horse's ration.

This suggestion having been acquiesced in, in 1822 the following directions were sent to the Committee:—

1st. The Committee is authorised to make a series of inquiries into the nutritive value of different articles of forage by direct experiment on horses, the experiments to be conducted in the 3d Regiment of Lancers, now in garrison at Paris.

2dly. Twelve horses in sound health, whose ages, breed, former service, mode of feeding, and of weighing, will have been previously determined on with accuracy by the Committee, will be submitted to experiment.

3dly. There will be assigned to every two horses an exclusive alimentation out of the various articles composing horses' food: thus, two of them will be fed on straw, two on hay, two on bran, two on barley, and two on barley-meal.

The quantity of each of these provenders will be fixed by the Committee, at first, in the approximative manner; afterwards, according to effects, in a more rigorous manner.

4thly. The horses submitted to these experiments will continue their ordinary duties, and will be subjected to the same hygiènic regime and the same work as other horses of the regiment.

5thly. During the carrying on of the experiments, the horses under them will be weighed every morning, fasting; their weight being likely to afford some useful information on the respective nutritive value of the divers forages they have been living upon.

6thly. These first essays will be likely to lead to other experiments combining two or three forages, together, &c.; and in directing the proportions the Committee have power given them to prescribe any that may seem to them useful in order to arrive at an exact knowledge of the nutritive value of the different articles,

and ascertain whether the mean equivalents which have been adopted ought to be considered as definitively fixed.

In compliance with these instructions, the experimental inquiries into the alimentation of the horses of the army commenced 7th June, 1842, in the 3d Regiment of Lancers, and were prosecuted the following years in a great many regiments, besides several remount depôts.

The results obtained in the course of these experiments, which we may, *en passant*, remark were conducted with the most punctilious care and attention, may be summed up as follow:—

Series.	Composition of the Experimental Ration as compared with the Regulation Ration.	Condition of the Horses.
II.	Hay Proportion, Regulation Straw .....Diminished Oats .....Augmented	Ameliorated; diminution in circumference; one horse augmented in weight.
	Hay .....Augmented Straw .....Regulation Oats .....Diminished	No change.
	Hay .....Diminished Straw .....Augmented Oats .....Augmented	Amelioration in one horse; no change in the other.
III.	Hay .....Augmented Straw.....Regulation Oats .....Diminished	Diminution in weight.
	Hay .....Diminished Straw .....Augmented Oats .....Augmented	Weight of one horse augmented; of another diminished; dejections less frequent and less abundant. Augmentation of vigour. Health perfect.
	Hay.....Regulation Straw.....Diminished Oats .....Augmented	Augmentation of weight and vigour. Dejections less frequent and less abundant.
IV.	Hay.....None Straw .....Augmented Oats .....Augmented	Diminution of weight. Great vigour. Transpire less.
	Hay .....Augmented Straw .....None Oats .....Augmented	Weight and circumference augmented. Vigour diminished. Dejections copious. State approaching disorder.
V.	Hay .....Augmented Straw .....None Oats... .....Augmented	Weight and volume augmented. Vigour diminished. Sweats abundant.
	Hay.....None Straw .....Augmented Oats .....Augmented	Weight diminished. Increased vigour and energy.

6th, 7th, and 8th Series.—Exclusive Feeding.

Series.	Composition of the Experimental Ration as compared with the Regulation Ration.	Condition of the Horses.
VI.	Straw.....24 lbs.	Weight and circumference diminished. Increased vigour.
	Hay .....24 lbs.	Weight diminished. Circumference augmented. Vigour diminished.
	Oats.....24 lbs.	Weight and circumference diminished. Vigour augmented.
VII.	Hay .....24 lbs.	Weight of body augmented. Same circumference of abdomen.
	Straw.....24 lbs.	Weight and circumference augmented.
	Oats.....24 lbs.	Weight augmented in one horse; diminished in another. Circumference the same in one horse; augmented in another.
VIII.	Oats .....24 lbs.	Weight considerably diminished. Great vigour. Circumference diminished in one horse; the same in another.
	Straw.....24 lbs.	The weight of one horse has become augmented; that of another diminished. The circumference is the same.
	Hay .....24 lbs.	Idem.
IX.	Hay.....None Straw (cut into chaff) .....Augmented Oats.....Augmented	Vigour augmented. Health perfect.
	Straw (cut into chaff) 16 lbs.	Great diminution of vigour. They drink much.
	Bruised oats.....12 lbs.	Dull, without energy. Disgusted with their food.
X.	Barley.....4 lbs. Straw.....Augmented Oats.....Diminished	Weight diminished. Sensible amelioration.
	Rye .....8 lbs. Oats.....Diminished Straw.....Augmented	Weight diminished. Slight amelioration.
	Barley.....8 lbs. Straw.....Augmented	Augmentation of weight. More vigour.
	Rye .....8 lbs. Straw.....Augmented	Augmentation of weight. Less vigour.

*** The above is the detail of the experimental results to which, in our last month's "review," our corollary (at vol. xxii, p. 693,

commencing with the words, "From several series of experiments") referred.

To the above (French) account we append an

Extract from the Government Forage Contract.

In lieu of every pound of oats, of barley one pound.
ditto of malt three-eighths of a pound.
ditto of oatmeal one-third of a pound.
ditto of bran one pound and one-eighth.

New hay to be taken into use 10th October of the same year.

Oats to be taken into use on the 1st January of following year.

Twelve days' supply of forage always to be kept in store.

Green forage may be substituted in proportions equal to the value of the hay.

The whole of the allowance need not be drawn; but 1½ lb. of oats may remain from each ration, and be drawn at any other period the commanding officer pleases.

The last extract we have made is rather important, and, strange to say, until this moment we ourselves were not aware of it. It strikes us that it would be very useful during the winter season, when the horses have nothing to do, and are fat, to deprive them of 1 lb. of oats, or 1½ lb., and to give them the extra allowance during the drill season.

Home Extracts.

On the Management of Farm Horses.

By W. C. Spooner.

*** The readers of The Veterinarian have not forgotten how recently its pages have been occupied by an "Essay" on this nationally important subject from the pen of Mr. Read, of Crediton; which, as we stated at the time, in consequence of its reaching its destination too late for admission into the lists of competition, was returned, and eventually fell into our hands. We have now very kindly had sent to us by its author, Mr. W. C. Spooner, the

"Prize Essay," which we shall translate into our pages likewise *in extenso;* the subject being one that, in the concise form in which it is compulsorily treated, will hardly admit of abridgment, much less of curtailment: nor will our readers, we feel quite sure, find fault with us for presenting them with papers of the class before us in their unmutilated and unaltered form, whenever they may turn out, as these two have done, so creditable to the members of the veterinary profession.—Ed. Vet.

The great importance of the subject of this Essay cannot for a moment be disputed. The vast amount of capital invested in farm-horses is nearly equal to the annual rent of the land cultivated by them, and the annual cost of keeping these horses is not less than their actual value. Thus, if we take the number of acres of *arable* land in England and Wales as 13,100,000, and the rental as £12,000,000*, we have this large sum as representing the cost of our agricultural horses, and a similar or greater amount as the value of the food they annually consume. Though this may appear a rough method of making our estimate, I believe it to be not very far from the truth. These circumstances are sufficient to demonstrate the national importance of our subject; whilst its individual consequence to agriculturists may be enforced by the fact that not only is a sum nearly equal to the annual rent required for the purchase, and also for the yearly keep of the horse-power on a farm, but it is a constant weight that cannot be shaken off or shifted to other shoulders. In manufacturing operations and in locomotive travelling, steam-power has, from its superior economy, effectually supplanted animal power; but except for the purpose of thrashing it has been found inapplicable for the tillage of land, and still more so for the cartage of corn, hay, and manures. As, therefore, horses *must* be kept for these various purposes, it is surely of the utmost importance to understand and adopt the best and most economical methods of managing them.

The amount of horse-power required on an arable farm must, or rather ought, to be regulated by the requirements of spring, turnip, and wheat sowing. Unless a sufficient number is kept to take advantage during these periods of the most suitable weather, so constantly varying in this country, great will be the loss ex-

* Mr. Middleton, in his Survey of Middlesex, estimated the whole land under tillage in England and Wales at 12,000,000 acres. Since his time a considerable quantity of down and pasture-land has no doubt been broken up; but in reckoning as upwards of 10 per cent. the land thus brought under the dominion of the plough, we are not underrating the march of improvement. It may be useful to add, that the value of the agricultural produce raised on the above has been estimated at about 70,000,000, whilst that from pasture-land has been taken about 60,000,000.—Author.

perienced; and on the other hand, if more are kept than the sowing season demands, a heavy expenditure is uselessly incurred.

We take it therefore as our starting-point, that the number of horses to be kept on a farm must be regulated by the requirements of the sowing seasons. On this must hinge our whole subject, and to it must be directed its different divisions as laid down by the Council. It is a drawback upon horse as compared with steam power, and more particularly as relates to farming operations, that whereas a steam-engine when not in work consumes no fuel and does not waste from wear and tear, a horse must be fed whether he is at work or idle; and thus throughout the winter months, when there is but little work to do, he must be kept in condition in order to perform properly the labours of the spring. It is therefore of imperative importance to keep such horses on a farm as are capable of performing properly a horse's work; for if weak, under-sized, infirm animals are kept, each of which is only capable of doing one-half or three-fourths of a day's work, not only is there the loss of this one-fourth of the day in the busy periods of the year, but an additional number of horses must be kept all the year round. It is only begging the question to say that this infirm horse does by hook or by crook contrive to get through his day's work in the busy periods; for if he is able to do this, then an able-bodied horse is capable of doing, with no extra fatigue, one-fourth more work at least, and it is the fault of the owner if this is not accomplished.

With these preliminary observations we proceed to consider our subject according to the divisions proposed by the Council:—

1. The various breeds.
2. Breeding and rearing.
3. Keeping, whether in stables or the open air.
4. Feeding in different seasons.

1. *The various Breeds of Cart-horses.*

The conformation of the cart-horse differs from the thorough-bred and other light horses principally in the construction of the skeleton: not only are the bones actually larger, but there is a greater amount of bone in proportion to the muscular system than in other horses; and there is in the heavier breeds such a disposition to form or secrete bone in the system, that even before the animal is five years old many of the cartilaginous structures, as, for instance, the cartilages of the foot, become changed into bone; that is, the earthy part of bone, which is principally phosphate of lime, becomes deposited where cartilage only ought to exist. This predisposition to deposit the earth of bone, so peculiar to the heavy breeds, is greatly accelerated by concussion, or any thing, indeed,

which induces chronic or rather sub-acute inflammation. Thus the London pavement is a fertile cause of this disease, so much so that there is scarcely a dray-horse in the metropolis but what has some degree of ossification of the cartilages by the time he reaches six or seven years of age. I have no reason to believe that the food of heavy horses contains a greater proportion of the earth of bones than that of other horses, but there is unquestionably a greater power of assimilating these earths; so that I doubt not that, if the blood of the dray-horse and that of the blood-horse were separately analyzed, a greater amount of the phosphates would be found in the former.

The effect of this redundancy of bony structure in the system is to afford a larger basis on which the superstructure is built. The extremities of the bones which form the joints are more extended, giving a greater power of sustaining weight; not that the bones are actually stronger, but rather the contrary, for, in fact, no bone can be stronger in proportion to its size than that of the thorough-bred horse: it is hard, firm, and compact, whilst that of the cart-horse is softer, and abounds more with fat or marrow. Although the surfaces of the bones which form the joints are larger laterally, yet they do not afford so much extent of motion as in lighter horses, or, in other words, the motions of the joints are more limited.

The larger bony frame possessed by these horses, of course, affords a corresponding surface for the putting on of flesh, as well as a greater capacity for the development of the internal organs. The muscles (or flesh) are more remarkable for their thickness than their length, the former being the cause of *power*, the latter that of *speed*, and the spaces between them are simply filled up by depositions of fat. The frame of the body is distinguished by rotundity and thickness; the fore legs are wide apart, and the chest broad, but by no means deep, as in the long-winded speedy animal. The digestive organs are capacious, and the digestive functions far more powerful than those of the thorough-bred horse, whilst the brain is relatively smaller and the nervous system altogether less developed. We have here the key to the points of the cart-horse. Whilst he should possess all the characteristics of the breed, he should be free from extremes. Thus, while his back should be short and broad, the body round as a barrel, and consequently wide in the chest, yet the latter point must not be carried to such an extreme as to cause the horse to be a slow walker, for of all the *sins* of the cart-horse this is surely the greatest. An animal whose walk does not exceed two miles an hour will scarcely get through half the work in the day that will be accomplished by the free moving horse that can do his four miles in the same space

of time. So important do I hold it that the cart-horse should be fast in the *only* pace he is required to perform, that I would recommend to the Council of the Royal Agricultural Society, or rather to the stewards of the cattle-yard, that a distance should be measured off, to the extent of some fraction of a mile, in the cattle-yard, so as to afford an easy method of judging of the pace of cart-stallions in their walk; for I hold it as a point of the utmost importance that a prize should never be awarded to a bad or slow walker, however great his strength or perfect his symmetry may otherwise be.

With these preliminary observations I proceed to consider the various breeds of cart-horses.

The *cart-horse* is not an aboriginal breed in this country, but was imported from the neighbouring continent since the Norman Conquest. Indeed, we have reason to believe that the horses employed in the army of William the Conqueror were little better, as respects breeding, than the cart-horse of the present day. As long as armour was in fashion a large massive animal was required to support the enormous weight of the steel-clad knight, and to withstand the ponderous attack of a similar opponent. The half-bred horse was then unknown, and the Barb and the Spanish horse were insufficient in size, so that recourse was had to the large black horse which had been known throughout the fertile plains of Europe from time immemorial, and from which, no doubt, the greater portion of our cart-horses are descended; for we find that during the reign of the Edwards, repeated importations of these animals took place, and in the time of the Duke of Newcastle, who wrote a work on horses in 1667, there was in this country an established breed of cart-horses.

The most prevailing colour amongst these animals is black, so much so, that we recognise a distinct breed under the appellation of the *old black cart-horse*. We scarcely ever find that the thorough-bred horse is of a black colour, whilst it prevails very much amongst the coarser kind of horses. The black cart-horse is pretty generally distributed throughout England, and may, indeed, be divided into three kinds:—First, the large massive animal reared in the rich marshes and plains of the Midland Counties expressly for the London brewers; secondly, the smaller sized, but still tolerably heavy, kind of horse generally employed for agricultural purposes (a strong compact animal, but slow in its action); and, thirdly, a lighter and more active animal, possessing, in fact, either some admixture of blood of a lighter breed, or being the descendants of the Flanders coach-horses discarded from the carriage to make room for the Cleveland, and welcomed in their more legitimate sphere at the plough-tail.

The *dray-horse* can only be reared in the richest pastures, and

is found in the fens of Lincolnshire in the greatest perfection. The breeders usually sell them as two year-old colts, retaining as much as possible mares for their own work and for the purpose of breeding. The purchasers of these colts work them moderately till they are four years old, feeding them well during this period, and, indeed, previous to their resale, they are often taken out of work and actually fatted in loose boxes, almost like oxen for the shambles, in which state they are supposed to please the eye of the London brewers, for whose more particular use these pampered animals are bred. Thus the colt, purchased perhaps for £40, realizes in the course of two years double that amount, besides working moderately during this period. Thus, if the horse does not fall a victim to the various diseases which a redundancy of blood is calculated to induce, he yields an ample profit to his feeder. These ponderous animals are frequently seventeen hands high; and their sleek and glossy appearance, as they move majestically through the streets of the metropolis, present one of the most striking sights to the eye of the foreigner. That such large massive animals are really required, or are the most profitable for their peculiar work, is a matter of considerable doubt; however, it is a species of pride which has long prevailed among our London brewers, and whilst they continue the premiums in the shape of high prices for these massive animals, the breeding of them will continue a profitable pursuit, and the streets of the metropolis will continue to exhibit the *largest horses in the world.* One great drawback attending this breed is their tendency to weak and convex feet, and to ossifications of the cartilages and pasterns, the former being the effect of their great weight acting on the soft horn induced by the moist pastures, and the latter to their great predisposition to throw out bone, caused, perhaps, partly by the large amount of the phosphates taken in their food. Many of these horses are rendered useless by these morbid deposits, which yet are so common that there is scarcely a dray-horse in London but what possesses, in some degree, these *side-bones,* and in very many instances no injury takes place.

In the improvement of this breed of horses it ought to be an object to diminish, or rather discourage, as much as possible, these objectionable qualities to which the breed is naturally so prone.

The large dray-horse is by no means confined to those of a black colour, we have many of a bay, and still more of a brown colour, and also many greys and roans.

There are also very many excellent compact cart-horses more adapted for agricultural purposes of these various colours, and, indeed, in general I prefer them to the black cart-horse, as possessing greater activity, cleaner limbs, connected with equal compactness and strength.

I may here observe, that at the meeting of the Royal Agricultural Society at Northampton, where the show of horses was large as well as excellent, there were only two of a black colour, whilst there were many browns, bays, and chestnuts, and most of them worthy of commendation.

It is in the Midland Counties that these horses are principally bred; and though of no peculiar or distinct breed, they offer as favourable specimens of horses adapted for all the various purposes of agriculture as are to be met with anywhere or in any country.

The *Suffolk-Punch* is a well-known and much-esteemed breed for agricultural purposes, possessing the combination of strength, compactness, and activity more highly than any other breed. It is impossible to trace the origin of these horses; but they have been cultivated in Suffolk for very many years, and were probably once employed for other purposes than those of agriculture. These horses are, for the most part, of a chestnut colour, though sometimes sorrel, which uniformity shews that they have been kept tolerably pure. They are distinguished by roundness of barrel and compactness of form generally, combined with great activity. They are exceedingly stanch to the collar, free from any redundancy of hair on the legs, and are by no means coarse about the head. They are rarely of a large size, but usually range from 15 to 15½ hands. The most inferior kinds have ragged hips and *goose-rumps*. It speaks highly in favour of this breed that, at the late meeting of the Royal Agricultural Society of England, at Northampton, they carried away two prizes, besides one high commendation; indeed, the best and second best two-year-olds were of the Suffolk breed as well as the second best horse of any age. As these horses are inclined to be small, size should be attended to and encouraged as much as possible. It should also be observed, that this breed of horses are rather more liable to strains of the sinews and ligaments than others.

The *Clydesdale* horses are larger than those just mentioned, and are found most extensively in the neighbourhood of the river after which they are called, where their services in the one-horse carts of the district are well appreciated. Indeed, there is no description of animal that appears better adapted for single-horse carts, or that can get through more work in the course of the day. They are, for the most part, powerful horses, standing about 16 hands high, and are extremely active, and, indeed, very fast walkers. Their faults are, a tendency to light bodies and long legs, and some of them are hot workers: when free from these defects they are certainly a most valuable kind of animal for agricultural purposes. They are generally docked in their native district, and their short tails, so unusual in cart-horses, give them a very unique appearance. A pair of Clydesdale horses will plough a larger breadth

of land than almost any other kind of horses; but they require to be well fed in a greater degree than most others. They have usually rather small heads, which, with their great activity, shews that their pedigree is not altogether of the cart kind. We are told that an Earl of Huntingdon imported some Dutch mares (a breed then much thought of) into the district of the Clyde, which being crossed with the native breed (probably the ancient pack-horse), thus became the founders of the now highly appreciated Clydesdale. The prevailing colour is black, but there are also many browns and some greys. The great bulk of this breed is susceptible of much improvement by careful selection in breeding, and avoiding the evils which I have pointed out as those to which the breed are prone.

The *Cleveland* cannot certainly be considered as a breed of cart-horses, though they are occasionally employed for this purpose. There was a very fine specimen of this breed exhibited at Northampton as a stallion for getting cart-horses, and which animal was highly commended; but although unquestionably he was calculated, if put to suitable mares, to beget some excellent progeny for carting purposes, yet it must be acknowledged that he was still more valuable in his more legitimate sphere as the sire of carriage-horses. I understand that, as a matter partly of curiosity and partly to decide a difference of opinion, the measurement of this horse was taken at the girthing-place, and the result was that, though equal in height, he proved one foot less in circumference than many of the other horses. I am glad, however, to find that at the forthcoming meeting at York numerous prizes will be awarded to various kinds of horses, so that the merits of the Cleveland Bay will be tested, as well as others of the lighter breeds.

These are the principal breeds of cart-horses found in this country; but there are very many useful animals to be met with in various districts though belonging to no distinct breed; and there are, unfortunately, too many of a very different class whose only pretensions to the name of "cart-horse" consists in their great deficiency of breeding and their want of adaptation to any other purpose. These undersized badly-formed horses usurp the place of better animals, and their perpetuation is therefore to be deprecated.

There is a certain average size for horses best suited to agricultural purposes, that is, they should be strong enough to render more than two horses in a plough a needless expense, and yet not so heavy as to impair their speed and activity. From 15 to 16 hands appears to be the proper height; lower than the former, or higher than the latter, is equally objectionable.

[To be continued.]

On the Commercial Varieties of Ginger.

By Jonathan Pereira, *M.D., F.R.S.*

In the preparation of the third edition of my *Elements of Materia Medica*, I have had my especial attention drawn to the different commercial varieties or sorts of the several articles of the Materia Medica; amongst many others, to those of ginger. Perhaps the following notice of the varieties of ginger now met with in the English market may not be uninteresting to some of your readers.

I have met with ginger in three different states in the English market, namely, in the fresh state, forming what was termed *green ginger;* secondly, in the state called *preserved ginger;* and, lastly, *dried ginger*, the usual form in which it is sold by grocers and druggists.

1. green ginger.

Small parcels of this have been brought over from Jamaica. The samples which I have met with were soft, and had the character of rhizomes which had been recently taken out of the ground. I am informed that, in a commercial point of view, they were worthless, most of them having perished on the journey. Recently none has been imported.

2. preserved ginger.

As this is chiefly used as a condiment and dessert, it will be unnecessary to describe it. Two sorts are now in commerce.

1. *Jamaica Preserved Ginger.*—This is the finest imported. It comes over in jars (seldom in barrels) of various sizes. Its value is 3*s.* per lb., duty paid.

2. *Barbados Preserved Ginger.*—This is not so fine as the preceding, and is seldom imported, say perhaps only once in two years. It comes packed in jars. Its value is from 2*s.* to 2*s.* 3*d.* per lb.

3. *China Preserved Ginger* is large, but stringy. It is generally imported in jars of about 6 lbs. each, seldom in barrels. Its value is 1*s.* 6*d.* per lb.

4. *China dry Preserved Ginger* has been sliced before preserving. When preserved, it is packed and imported in boxes. It is not often brought into the London market.

3. dried ginger.

General Description.—The *dried rhizome*, called in commerce *ginger-root* (*radix zingiberis*), occurs in flattish, jointed or

branched, lobed, palmate pieces, called *hands* or *races*. The largest rarely exceed four inches in length. The larger, bolder, and plumper the races, the more they are esteemed in commerce.

Some of the commercial sorts have not been deprived of their *epidermis*, which is dried on them, and give the races a shrivelled character. Other sorts have been carefully scraped and peeled while in the green state. The first are said to be *coated* or *unscraped;* the second *uncoated*, or *decorticated*, or *scraped*. Considered with respect to the presence or absence of the coat, the commercial sorts of ginger may be thus arranged:—

Uncoated or Scraped.	*Coated or Unscraped.*
Jamaica Ginger	Barbados Ginger
New Malabar do.	Old Malabar do.
New Bengal do.	Old Bengal do.
	African do.

Although the colour of ginger is an important consideration in determining the commercial value of this root, it is difficult to describe in words the different colours which characterise the various commercial sorts of ginger. The terms *white* and *black* ginger formerly in use merely mean that some sorts are paler or whiter, others darker or blacker; but absolutely white or black ginger is of course unknown. The different sorts of ginger pass almost insensibly from the one into the other, so that it is impossible to refer them absolutely to the pale or dark sorts. Mr. Faber tells me that, were he to classify them according to their external colour, it would be thus:—

Grey or Dark.	*Intermediate.*	*Bright Yellow or Pale.*
Old Bengal	Barbados	Jamaica
New Bengal	Old Malabar	New Malabar.
	African.	

The internal colour of ginger and its softness or hardness, as observed by cutting it, is another important character. The brighter and paler the colour, and the softer the texture, the more highly is ginger valued. Ginger which is dark and hard, or flinty to the cut, is of inferior value. A transverse section of the larger and more perfect pieces shews an outer, horny, resinous-looking zone, surrounding a farinaceous centre, which has a speckled appearance from the cut extremities of the fibres and cuts.

VARIETIES.—Several varieties of ginger are met with in English commerce. These we may conveniently arrange, according to the countries producing them, in three classes: 1st, West Indian; 2dly, East Indian; 3dly, African.

1. *West Indian Gingers.*

This division of gingers includes two sorts, Jamaica and Barbados, which may be taken as the types of all other sorts of ginger. Unlike the East Indian kinds, they are rarely wormy.

1. JAMAICA GINGER (*radix zingiberis Jamaicensis*).—The sort of Jamaica ginger now found in commerce was formerly called *white ginger*, to distinguish it from an unscraped sort, which was termed *black ginger*. The latter does not now occur in English commerce.

Jamaica Ginger.

Jamaica ginger is imported in barrels holding one cwt. each. It is a scraped or uncoated pale sort. When of fine quality it consists of large, branched, plump, and fleshy soft races, whose texture is fibrous and mealy, and which externally are yellowish white or pale buff, and internally, when cut, present a bright but pale tint. Inferior samples consist of small shrivelled races, which have an ash-grey tint externally, present a brownish colour internally when cut, and have a hard or flinty texture. Good Jamaica ginger yields a beautiful bright straw-yellow, somewhat buffy, powder.

2. BARBADOS GINGER (*radix zingiberis Barbadensis*).—This is imported in bags of about sixty or seventy pounds. It is an unscraped, or coated, somewhat pale sort.

Barbados Ginger.

Its races are shorter, less branched, flatter, and darker-coloured, than Jamaica ginger, and are covered with a corrugated epidermis.

Pharmaceutical Journal.

Foreign Extracts.

MEMOIR ON THE CASTRATION OF THE HORSE.

By M. GOUX, *Department Veterinary Surgeon at Agen.*

THE question of castration remains no longer *sub judice*. In almost all civilized countries man has availed himself of this means of rendering the horse domitable and subservient to his purposes. It is true that castration robs horses of their animation, their beauty, their courage, their stamina; but then the manageability of geldings as compared with stallions is more than an offset against these

losses. They tell us the Arabians never practise castration, and that their horses are in consequence the best in the world; that in Spain the cavalry horses are left entire; and that in France we find uncastrated horses preferable for certain laborious work. These facts, however, are not sufficient to rebut the argument in favour of the operation*.

Knowing from experience that the changes castration produces in the animal's organization are more or less conspicuous, and are accompanied with more or less advantage according as the operation is performed early or late in life, the question becomes raised, at what age castration had better be undertaken?

The arguments in favour of late castration are—that, when performed early, time is not given for the development of the croup and neck of the animal, nor for the formation of his temperament, his powers remaining comparatively weak. The testicles descend into the scrotum as early as the fourth or fifth month; but, if we would insure perfect development of frame, they ought not to be removed prior to the fourth or fifth year.

On the other hand it is contended, by the advocates for early castration, that the operation is safer at this period of life; that the animal feels the effects of it less; that he escapes the weakness of loins and croup, dejection and disinclination to work, and shrinking of the muscles of the fore quarters, consequent on the late operation. According to them, it is an error to suppose an animal will, after being castrated late in life, retain the development the possession of his testicles has given him. Not only, says Professor Renault, are these developed formations modified by castration, rendering the animal less robust, but in consequence of castration being performed at a period when the genital functions are in full vigour, we expose the animal to greater risks from the operation.

The way to decide this important question will be to observe the effects of castration on the organization of the horse, and to watch its operation on colts cut at different ages, so as to be able to establish some sort of useful comparison.

At five years old the horse arrives at adult-hood; the great changes educed by puberty have taken place. Under the influence of the genital organs, the fore quarters have become much developed in comparison with the hind; strength and vigour are at their apogee; the character is formed, and in every part almost displays indications of independence and pride, which are very

* In British India the horses of the Hon. Company's cavalry are all—or rather, were wont all to be—entire. Of late, some regiments have been submitted to castration; and it has become a question with the authorities how far geldings are, taking all circumstances into consideration, preferable to stallions.—Ed. Vet.

apt to turn into vice. Growth being now complete, the orgasm having acquired all its attributes, progressive advance in assimilation stops, is completed, and the action of de-assimilation is about commencing.

Deprive an animal at this crisis of his life of his sexual organs, and the muscles of the fore-quarters diminish, his neck grows thin, the head alone, from its bony construction, remaining large and strongly marked. While behind, the straight and pointed quarter, and flat and lank thighs, become incapable of their proper development. Every part of the economy betrays defective proportions and an absence of that harmonious conformation necessary to constitute a well-made horse. Moreover, the animal suddenly degenerates from his factitious energy and proud elation, for which he is solely dependent upon his generative organs, into a state of softness and atony, the inevitable result of the dispossession of organs which up to that period had re-acted upon his entire constitution. All that he retains is his intractable disposition, which may render him dangerous, or at least difficult of management. Rarely have good services been exacted from a horse from whom the testicles have been taken after such development, at a period when almost all his vital energy is concentrated upon parts endowed with the important office of the reproduction of his species.

Répertoire de Médecine Vétérinaire, Bruxelles, April, 1849.

[To be continued].

On the Contagiousness of Strangles.

(*A Collection of Observations tending to demonstrate the truth of this.*)

THE idea of strangles being contagious is not new. Solleysel entertained it; indeed, he thought that glanders might be caught from strangles. He viewed strangles as an effort of nature to discharge out of the system some general disease of it; and thought that horses, like children having small-pox, must have it once in their lives. The tumour between the branches of the jaw-bone did not invariably, he observed, come to suppuration, but he always thought the end better answered when it did. Some horses, however, he added, cast off this peccant humour through other parts of the body, such as the shoulder, the hock, over the kidneys, through the foot; through, indeed, that part of the body which was the weakest. A horse will cast off his humour through a wounded part, whenever Nature is prepared to get rid of it.

These remarkable passages evince Solleysel's just notions of the nature of strangles. Many authors who wrote after him adopted his opinions, viz. Garsault, Bourgelat, Brugnone, Gilbert; likewise Sacco. Gohier and Poggia sought to give experimental proofs of the contagiousness of strangles.

Notwithstanding, however, the opinion of contagiousness was thus strongly supported by men of science, it could not stand against the doctrines of Broussais, who at this period caused a total revolution in the opinions entertained about the contagious properties of a host of diseases. Strangles became completely despoiled of such notions as ancient hippo-pathology had invested it with; henceforth the disease was located in the respiratory passages, and was no longer considered but as a simple inflammatory malady, insusceptible of transmission.

This novel view of strangles was not long before it attracted numerous admirers, and for its principal defenders had Hurtrel d'Arboval and Professor Delafond.

At the present day there seems an inclination to restore the idea of contagion.

M. Mousis, a veterinarian well situated to be able to resolve this question, informs us that experience has taught him the expediency of separating horses in health from those having the strangles: a precaution rendered the more necessary from the fact of strangled subjects casting their discharges upon and licking their neighbours. And I know positively that strangles is communicable in this manner, not only from colt to colt, but from colts to old horses.

M. Oger, veterinarian to the auxiliary remount establishment at Castres (in his memoir "On the Strangles," which was made a prize of by the Royal and Central Society in 1844), in loud terms denies any contagion; being of opinion that the simultaneousness of attacks of strangles on certain numbers of horses living together is always explicable through general causes.

In 1848, M. Dounarieux presented a memoir to the National and Central Society of Veterinary Medicine, in which he says—I am desirous of speaking on the contagion of strangles. I have spent six years in the same regiment. I have been two years in garrison in Brie, and three years in Beauce. Neither at the dealers' nor with the regiment *have I ever seen* SINGLE *cases of strangles among the young horses.* I have frequently visited detachments coming from remount establishments; and, when strangles has been present, great numbers have invariably had the disease. Since the four years I have resided in Puisaye, I have never been called to an *isolated* case in any stable in which young horses lodged: always has the disease attacked them *generally.*

I may conclude by asserting that, 1st, sound horses have been stabled with horses having strangles, and have caught the disease; and, 2dly, animals ill from strangles, on the same farm and in the same condition, have been separated from others in health, and the latter have not had the disease.

If any shade of doubt be cast on the above observations, we can only say, "*Vide et ne sis incredulus.*"

Recueil de Médécine Vétérinaire, July and August 1849.

CIRCULAR.

To the Members of the Veterinary Medical Association, London.

DEATH has just removed from our ranks two veterans of science and the professorship.

The learned and venerable M. Alexis Dupuy, senior professor at the Alfort School and director of the Veterinary School at Toulouse, and the industrious professor, Jean Baptiste Rodet.

Both, although holding different positions, are worthy of the acknowledgment and the respect of the veterinary profession. Dupuy has powerfully contributed to elevate it to that height in public esteem which it has attained. United by friendship, from an early period, with men illustrious in medical science, whose names will always shed lustre on this age, he made them appreciate, by the variety and profundity of his knowledge, the utility of our profession, of which little was then known, and to which he had entirely devoted himself. And if the doors of the Academy of Medicine have been opened to veterinary surgeons from the foundation of that illustrious Society, it may be said, to the honour of Dupuy, that his high reputation has not been without its influence in producing this happy result.

The learned Jean B. Rodet, although not occupying so elevated a position, was no less indefatigable in his devotion to our common science and the teaching of it, which he did even to the sacrifice of himself, and at last was overcome by the labour which he daily conscientiously performed.

The lives of both have been entirely that of self-denial to themselves and families, and of devotion to the public good: from which cause they have not left any thing to their widows and families.

After forty-five years of public service, M. Dupuy has died entirely without resources, and his widow has not even the right to

a small pension to which it was generally thought she would be entitled; a national decree requiring that for these rights to be secured it is necessary that marriage should have preceded the death of the functionary five years. M. Dupuy had been married but three years when his sudden decease took place. Besides his widow, he has left a son about twelve years of age by a former marriage.

With respect to Jean B. Rodet, who has just died from a sudden attack of a cerebral disease, and which arrested him in his labours at the period when his accumulated scientific knowledge had rendered easier the duties of his professorship; he has been taken away after fifteen years only in the exercise of this function, and has left his family almost without resources of any kind, which is composed of four persons, his widow, two daughters, and a son. His widow, according to the terms of the law, has the right to a pension amounting to a little more than twelve pounds per annum.

On account of these unfortunate circumstances, affecting individuals so eminent in their profession, and in every way worthy of respect, the members of the National and Central Society of Veterinary Medicine of France think it belongs to them to take the initiative, and to make an appeal to all the members of the veterinary profession to meet the misfortunes which have just overtaken the families of two of the most worthy of their brethren.

We therefore address ourselves to you, and solicit you to take part in this benevolent act. The members of almost all the professions in France have passed between them a contract of mutual assistance to relieve any of their members who may be overtaken by any sudden misfortune. Unfortunately, in our profession so commendable an association does not exist.

It is this unfortunate circumstance which obliges us to make this appeal to you, and we address you in order to unite all our efforts in this pious work of brotherly charity.

The National and Central Society of Veterinary Medicine has the firm hope that your donations will not inconvenience you. It does not ask a large sacrifice. It well knows the times in which we live; nor is it ignorant of the numerous misfortunes produced by the changes in society, and how frequently private charity is taxed; and this it is which has caused us to request so little from you. The magnitude of the most majestic river is effected by the number of rivulets which bring their tribute to its waters. It is a result of this kind which we wish to obtain. We number in France two thousand five hundred veterinary surgeons, and we venture to calculate within a certain limit upon a number of our foreign brethren with whom the Society is in correspondence to

aid us. Let each of you give the moderate sum of a franc only, and we shall thus obtain an amount sufficient for the families of our learned colleagues, and, aided by the kind and prompt assistance of the National Academy of Medicine, the Veterinary Schools of France, and our Society, they will then have obtained a position which will guarantee them an existence.

In limiting the donation to the amount of a franc only, and which it solicits from each member of the veterinary profession, the Society proposes it with the view that all be permitted to take a part in this good work, whatever may be the means each may have at his disposal.

It, however, does not limit any one from presenting as much more as he may feel disposed to do.

The members of the National and Central Society of Veterinary Medicine have subscribed the sum of 360 francs (about £15).

The Society reserves to itself the mode of disposing of the gathered sums, according to the respective wants of the different families for whom it has made this appeal to your brotherly assistance.

Receive the assurance of our affectionate and devoted sentiments.

BOULEY, Jun.
CREPIN.
ROSSIGNOL,
H. BOULEY, *General Secretary to the Association.*

On Tuesday, November 27th, a meeting of the Veterinary Medical Association was held in the Theatre of the College, for the purpose of taking the above Circular into consideration.

The President, Professor Spooner, in the chair.

It was moved by Mr. G. T. Brown, seconded by J. Broad, and carried unanimously,

"That this meeting, having heard the memorial read, received from the National and Central Society of Veterinary Medicine in France, do favourably receive the same; and, sympathizing with the parties whose misfortunes are therein detailed, do acquiesce in the wishes expressed by the memorialists."

Moved by Mr. J. Gamgee, seconded by Mr. T. W. Gowing, and carried unanimously,

"That the memorial having been thus favourably received, means be adopted to obtain subscriptions for the relief of the parties for whom the appeal has been made."

Moved by Mr. C. M. Baker, seconded by Mr. W. W. Toby, and carried,

"That for this purpose a Committee be appointed consisting of the members of the Council of the Veterinary Medical Association, with power to add to their number."

Moved by Mr. G. Varnell, seconded by Mr. J. Gamgee, and carried unanimously,

"That the above resolutions be published in THE VETERINARIAN and VETERINARY RECORD; and it is hoped that the Editors of these Journals will insert the same gratuitously."

THE VETERINARIAN, JANUARY 1, 1850.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

THE beginning of a new year being our signal for the commencement of a new volume, in accordance with an old custom which we must confess we feel loth to set aside, we would, on the two-fold novelty of the occasion, address a few words to our subscribers, either in reference to the volume we are just opening or to the one we have but now closed. First, then, turning the current of our thoughts back upon matters past, the restrospect reminds us that we can hardly do less than make a low bow to our good "Contributors," who, having the interests of veterinary science at heart, and determined not to see their "ould" Journal in these hard times in want of aliment, have steadily given it their support through the turbulent and perilous year of 1849. The "bad times,"—we with pain make the announcement,—have lighted heavily in places, we fear, upon veterinary practitioners in the country. The railways, the depressed state of agriculture, the contracted sporting meetings and transactions, have all tended to rob the veterinary surgeon of clients. "Good times," they tell us, "are coming," however; a prophecy we should be sorry to throw cold water upon by asking how or in what way it is expected they will or can benefit veterinary surgeons. And so we will, for a moment, indulge in the belief of what we hear, and essay to discover how such foretold

melioration is, in respect to the veterinary world, to be brought about.

With the return of "good times," certainly we might anticipate that the number of horses kept for pleasure as well as business would be very considerably augmented. Cheap forage alone is in favour of this, and we have hardly had in our remembrance hay and corn cheaper than at present. But then, this, the farmers say, is "at our cost." Were the tax on horses lessened or removed that might do something towards the encouragement to keep more. What, however, as it appears to us, will in time bring about this augmentation more certainly, will be the abandonment of many miles of branch railway which at present do not, nor seem likely to, in our time, repay their cost of working; and this cannot take place without giving rise to a proportionate increase in the employment of horses and carriages for the purpose of conveying passengers over the roads running to and from such places as were before connected together by railway.

These seem to us some of the vistas through which veterinarians may cast hopeful looks into futurity. Doubtless, there are others to which we at present possess no clue. May the realizations prove, say we, "better" when they come, and speedy in coming; and may our next year's volume open with a full and welcome account of them.

AGAIN has the season come round when the fattest of the fat of the land is exhibited to the gaze of the admirers of good living; and though much may be still urged against the wasteful obesity of many an animal, yet we are happy to observe a manifest improvement for the better,—more attention to symmetry than to fatty unwieldiness. There was one thing that particularly struck us, and that was, the improvement to be observed in the general character of the animals exhibited,—the symmetry was a decided improvement upon last year's exhibition; but there were still enough of *over-bred* animals to shew the ill-effects of such a system. We were also much pleased at the care and judgment displayed by the judges in the awarding of the prizes; as in only two instances could we, with the nicest criticism, detect any obvious fault—one in the cattle, in which size and fatness were arrayed against sym-

metry—so good were they both that they each obtained prizes; but in our opinion the second ought to have been third, and the third second. Symmetry with moderate fatness will outweigh coarse fatness, as it is not always that carcass weight is made up by size, but by firmness of texture. In the other instance, in the pigs, we were particularly struck with the importance of attention being directed to the quality of the flesh as well as to the size, shape, or early maturity of fatting. In the pig this is of essential importance, as the fat of this animal, unlike others, in general is entirely consumed as food. In the true bacon or pork districts this is a fact thoroughly understood, not only as being dependent upon the nature of the food on which they have been fed, but also on the peculiarity of the breed itself; and thus, if the progeny of any particular sow, breed, or even individual, is found to have this bad quality, it is not continued to be propagated from. This quality is best seen and demonstrable in the boiling or cooking: if it possess the proper firmness, it is said to "plim" or "plump" in the pot; that is to say, it increases in size, and the fatty parts are but little dissolved by the water: such pork or bacon is highly nutritious, has not any oily or greasy taste: the other kind shrinks in boiling, the fat boils out, the taste is oily or greasy, and, instead of affording nourishment, is more apt to derange the digestive organs. As lovers of fat bacon, and, indeed, of fat meats in general, we have paid much attention to this subject, and have tested so many varieties, that we may speak with confidence on this topic; and we may, perhaps, be tempted some day to give our experience to the public. We have been more particularly led to this train of thought from observing animals in two adjoining pens, each splendid specimens of the porcine genus; the one a pen of the "Coleshill" breed, the other a pen of "improved Berkshire." The first received no less than *three* prizes; the other was "commended;" but to our ideas the second ought to have had the preference over and over again: they were the youngest by more than nine weeks, and were what we should call the *ne plus ultra* of bacon hogs. Let your hunters of the "Praries" talk of their "buffaloe's hump," or your African sportsmen speak of a "roasted elephant's foot," even though it may be cooked *Caffre fashion*, yet we would wager not a trifle that one mouthful of our "improved Berkshire" would

be worth, for delicacy, flavour, and nutriment, a dozen of either. It is true that, for fatness, depth of belly, hidden eyes, and for colour, the Coleshill had it all their own way; but this is what we complain of: there was too much flank, too flabby, too oily, too loose a texture altogether; and quite sure are we that weight, when each was purchased for the bacon "silt," would be in favour of the younger but truer bacon-bred hog. We have much, very much to say on breeding and crossing, and the evils resulting from ignorance of the principles on which such should be conducted; a subject talked loudly enough of,—prated about at agricultural meetings,—till any reflecting man must be sick of the topic: but no rules have been laid down, no principles induced: some men have a knack of crossing judiciously; but we have never been able to arrive at any other conclusion, than that it was generally a haphazard sort of affair, only partially influenced by more skill or knowledge on the part of the individual. Such should not be.

In our pages for this month will be found, headed "Circular," the translation of a letter received by the Veterinary Medical Association from the National and Central Society of Veterinary Medicine of France, informing them that, in consequence of the decease of two distinguished French veterinary Professors, Messrs. Dupuy and Rodet, their widows and four children are left destitute; and requesting, on their behalf, our fraternal assistance. On no previous occasion that we recollect has an appeal been made to the profession of this country of the nature of the one before us. It is an appeal, coming from one nation to another, which nothing short of eminence in science and moral worth could authorize. As bare members of our profession, and men of another nation, we can know nothing about Messrs. Dupuy and Rodet; but, as *distingués* in veterinary literature, and contributors of no ordinary measure to our common stock of professional knowledge, we at once recognize a debt to them of no mean amount, of no common kind; and this debt we have an opportunity now afforded us of repaying in a manner that must be the most gratifying to our own feelings, while it reflects the greatest honour upon the memories of the departed,

viz. by contributing in aid of the support of those nearest and dearest to the valued deceased.

It may not be known to all of the veterinary profession of our own country, that M. Dupuy was Senior Professor at the Alfort (or Paris) Veterinary School, and Director of the School at Toulouse; besides being Editor of a Veterinary Journal—*Journal Pratique de Médecine Vétérinaire, consacré à l'étude des Maladies Sporadiques;* and author of a work on "the Existence of Intermittent Fevers in Animals," &c. &c.; and that M. Rodet, in addition to being Co-editor of a Veterinary Journal, was author of "The Doctrine of Physiology as applied to Veterinary Medicine"—"An Analytical Treatise on Veterinary Legal Medicine"—"A Treatise on Cattle Medicine"—"Researches on the Nature and Causes of Glanders"—"The Elements of Military Veterinary Medicine," &c.

It appears by the "Circular" that the number of veterinary surgeons in France is 2500;—perhaps we may compute our veterinary countrymen at little more than half this number;—and that, in order to put it in the power of them all to participate in the "good work," the Society have set the snbscription so low as one franc (10d.), without, however, desiring to baulk the good intentions of those who may wish to exceed that sum. This, it would seem, the members of the National and Central Society have in no small degree done, since their united donations—though we are not informed of their numbers—amount to 360 francs (£15). With these facts before us, suppose we were to fix our donation at five shillings *(six francs)* each. This might amount, in the aggregate, to a good round sum; while the fixture at which the subscription was set would, by staying the hand of him who felt inclined to give more, keep off any unpleasant feelings of rivalry in so pious an undertaking. We, however, have no wish to dictate to the appointed Committee. On the contrary, with every respect for the old proverb, that "in the multitude of councillors there is wisdom," we shall feel it our duty to render them our feeble aid in carrying out any resolutions to which they may finally agree.

MISCELLANEA.

Qualifications of Lecturers.

Poeta nascitur non fit, and so is a lecturer on medical subjects. Not only need he not learn anything touching the subject he proposes to handle, but he may be very little acquainted with subjects generally. He must be inspired. To practise surgery requires time, labour, and perseverance; to teach surgery or any of the branches of knowledge on which it rests requires nothing of the kind. The College of Surgeons say we will not allow any one to teach surgeons unless he be educated as well, at least, as a Fellow of our College. We will not recognise him unless he can claim an examination, if he has not been examined already. This seems reasonable, but it is found inconvenient. It bears hard on some worthy and gifted individual, and is therefore a grievance. I have not, says the candidate for lectureship honours, been engaged six years in study; I do not want to become a fellow. Perhaps not, nor a licentiate either, but he wants to be the teacher of fellows and licentiates, and to pocket their money too. This is queer. Some of our readers will open wide their eyes, and ask in wonder, is this the only test of lecturing fitness? Even so. The lecturer of surgeons need not be a surgeon or a physician either. He must have a diploma, *et preterea nihil.* True it is, the Colleges attempt to combat this doctrine, but in vain. The candidate is too strong, or the case is pressing. A lecturer is wanted to complete the school, or an excellent friend's son or nephew is in a fix. Any man who "passes," *ipso facto* is a lecturer on anatomy; a lecturer on surgery should, it is said, be an hospital surgeon; but then it may be said, and with truth, that the candidate for recognition is as good as an hospital surgeon. Then the candidate is "a chemist," although no surgeon or physician either; but Davy was, and Faraday is, neither physician nor surgeon. True, our friend here is no Davy or Faraday, but he is perhaps something more *apropos*, perhaps an apothecary, and an apothecary is good to "draw" the apothecaries' boys, and good too to "call one in." The resources, in fact, of expediency are inexhaustible, and salves for thin-skinned consciences always ready. Other branches of surgical education are equally easy of adjustment. A lecturer on the practice of physic need not—nay, the doctors say, should not—have had a surgical education; yet a man may not be the worse lecturer on peritonitis for knowing something of strangulated hernia, or on croup, for knowing something of the value of tracheo-

tomy; and so on. As for materia medica, midwifery, and medical jurisprudence, any one can deal with these subjects. To require a surgical education as qualification for a teacher in these departments is cruel and oppressive. Besides, the students themselves do not object to a man because of his defective education; they neither know nor care any thing about the matter. After all, it appears strange enough that this mistaken leaning towards an inferior qualification in lecturers should be acquiesced in, if not encouraged, by lecturers themselves. Surely it is their interest to uphold the character of their order, yet they are the first to lower it by indiscriminate admission to its ranks of incompetent and unqualified persons. Why is this? We know not, unless it be for some temporary accommodation. The lecturer in some "establishments" is, we say it not disrespectfully, like the Irishman's pig, he pays the "rint;" in other words, he buys a share in the concern, and shares must be sold as vacancies take place. The "school," too, must be perfect; no student is to be suffered to stray into other places, lest he should discover that other places are to be preferred. Far better not have him taught at all than taught by a rival in trade. This is a vile principle, notwithstanding its extensive application. How many are there far away who read this, and must now feel how unfairly they were treated, when students, in consequence of its prevalence. We cannot, however, now dwell on the subject, although so important in connexion with dissussions respecting medical education. Some will say such things should not be publicly canvassed; but we are of a different opinion. Neither executive nor legislature do any thing but mischief when they meddle in medical matters; our hopes of improvement must, therefore, depend upon a free exposure of the true state of things, however disagreeable or even injurious in other respects their exposure may be.—*Dublin Med. Press.*

A Bull Tried, Convicted, and Sentenced.

In 1314, a bull, having killed a man by tossing him with his horns, was brought before the judges in the province of Valois, and indicted as a criminal, and, after several witnesses had given evidence, it was condemned to be hanged. This sentence was confirmed by an order of the parliament, and carried into effect. And we are told that an unfortunate pig, which chanced to kill a child in Burgundy, was in like manner solemnly tried in court, and suffered the same punishment.—*Hortensius, or The Advocate.*

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IMPORTANT EXPERIMENTS ON THE FOOT OF THE HORSE.

(HAVING ESPECIAL REFERENCE TO THOSE RECENTLY MADE BY MR. GLOAG.)

By W. G. REEVE, *M.R.C.V.S., London.*

To the Editor of "The Veterinarian."

Sir,—IF I may be permitted to cast a mite into your treasury of useful knowledge, and occupy a corner in those pages which are, at once, the concentration of practical experience and the media of advancing the veterinary profession, I will take the liberty of making a few observations upon the subject which has so recently been the theme of general discussion, and has occupied so prominent a place in THE VETERINARIAN, viz., Mr. Gloag's experiments upon the foot of the horse.

Were it necessary, I would first allude to the credit due to that gentleman for industry and perseverance, in endeavouring to elucidate a subject which seems to have appeared both difficult and novel to the experimentalist; but where this has been so generally accorded by the profession at large, individual panegyric would appear superfluous.

After attentively perusing the pages so ably written by Mr. Gloag, we are irresistibly led to the *starting-point* of the author, and plainly perceive that the whole has been begotten by some subject of novel interest which had arrested his attention. This (like many others from which great events spring, extremely simple in itself) was, the indentations found upon the upper surface of the heels of old shoes, and which seemed to solicit, from some inquiring mind, an explanation.

Here was a phenomenon, and (excuse the alliteration) a philosopher, who, conceiving a new idea, sought to establish its truth by direct experiment.

The reasoning runs thus:—Since those marks could not have been produced either by lateral expansion or descent of the sole (to both of which there, doubtlessly, already existed a prejudice), there must be a downward and backward action taking place.

To establish this idea, and, at the same time, disprove former theories of "expansion" and "descent," experiments must be instituted.

The *action* was to be tested by removing from beneath the heels of the foot every resisting body which could oppose their supposed natural descent (the best means which could be devised for this purpose appears to have been the "shoe much sprung at the heels"), whilst, at the same time, *lateral expansion* and *descent of the sole* were simultaneously encountered by means of well tempered wax.

Passing over details, and arriving at the peroration, we find Mr. Gloag thus expressing his deductions:—

"There is no *appreciable lateral* expansion of the quarters of the foot at the *lower* circumference under any circumstances of shoeing, the only expansion which takes place being by gradual growth." * * *

"In ordinary shoeing, the base of the frog is a fixture * * *, its descent being entirely governed by the descent of the heels."

"That there is no appreciable descent of the horny sole in moderately concave feet under ordinary circumstances of shoeing," nor is there "sufficient descent of the sensible sole, under ordinary circumstances, to impede the circulation of blood in the foot; and that those beautiful provisions in the foot for the carrying on of the circulation seem rather designed to remove the possibility of obstruction to the course of the blood, than as the general means by which that circulation is forced onwards."

Furthermore, from experiment, he finds, "that when a shoe gently set off at the heels be nailed to the foot, the heels will descend until they touch the shoe."

He then observes, "That in a horse in a state of nature, or shod with the heels sprung, a certain action of the foot goes on in addition (to the backward and downward action previously described), namely, a slight declination of the whole hoof in the direction of its fibres; thus allowing the heels and the base of the frog to descend, which I consider to be the natural action of the foot, and that by shoeing we prevent this natural backward and downward action."

Assuming that these actions are demonstrably established, he proceeds to provide for them by recommending a style of shoeing with "the heels much sprung."

Now, upon an analysis of the foregoing conclusions, there are many of them so directly opposed to our acknowledged improvements in shoeing, that it becomes a matter of much importance to put them to closer test; and prove, if possible, either that those deductions are incorrect, or that the progressive improvements in the art of shoeing have simply been the hallucinations of professional enthusiasm.

If, as Mr. Gloag asserts, there be no descent of the horny concave sole, and, by inference, no appreciable descent of the sensible sole upon it, nor auxiliary aid given thereby to the pedal circulation, why should the farrier expend his time and dexterity in rendering concave the upper surface of the shoe, to provide for a contingency (bruising of the sensitive structures) that cannot occur, or an action (descent of the sole) which does not take place?

Secondly, if there be no lateral expansion of the foot, then the idea of a fetter from nailing would be chimerical, and the unilateral shoe useless.

As I do not approve of the nature of the experiments, or coincide in the conclusions drawn from them, I trust it will not be considered presumptuous to endeavour to point out the inaptitude of the one, or the sophism which has led to the other.

Primarily, it is highly necessary that the meaning of Mr. Gloag should be rightly understood; and, if I truly comprehend the experiments, the inferior border of the crust is first made perfectly level, before the shoe, which has its heels sprung, is applied; consequently, an angular space is left between each heel and the shoe, which angular point terminates a little posteriorly to the last nail-hole; the remaining portion of the shoe, upon which the bearing is designed to take place, fitting closely and evenly against the crust.

When such a shoe is so placed, it is evident that the heels of the hoof can only approximate to those of the shoe either by a bending of the fibres or by a motion of the whole hoof itself. If the *fibres* yield and the nails hold, then the inferior edge of the crust, bending down to touch the shoe, and being no longer level, must assume the position represented in the cut, whenever its under surface coincides with the shoe.

If the *whole* foot moves to accomplish the approximation between the heels and the set-off shoe, such approximation can only be effected by the rocking of the crust and springing of the nails, an effect which the annexed cut will illustrate.

If the *latter* be the gentleman's meaning, the plan would be at once precluded, by the tendency to spring the nails and cast the shoe. But I am much inclined to imagine that the former is the true interpretation, more especially upon perusing the following passages:—

EXPERIMENT 15.—"To the near fore-foot a shoe was applied, greatly sprung at both heels." * * * "The horse was now made to walk about, when I could perceive that the heels of the foot descended nearly to the heels of the shoe" (of course the nails did not spring, or Mr. Gloag would have mentioned it). "On the foot being lifted, the heels resumed their natural position." Again, in the observations upon EXPERIMENT 23,—"The sensible sole is much thicker and less vascular at the heels of the coffin-bone, which is also tipped with cartilage, apparently to allow of this backward action of the foot."

Conceiving it, therefore, to be Mr. Gloag's opinion, that the "natural action" of the hoof consists of this bending downwards of the hinder part, we must, before alluding to the merits or demerits of his plan to provide for such action, first ascertain whether or not such action really takes place when the foot is perfectly unconfined, or in a state of nature.

To resolve this question, I instituted the following experiment:—

A horse was selected with a good, open, and moderately concave foot, elastic as healthy horn could have been wished. The near shoe was taken off, when the under surface of the crust appeared perfectly level from toe to heel. Previously, a slab of gutta percha (in size about a superficial foot square, and one inch in thickness) had been prepared by being softened in hot water. This being laid upon a smooth pavement, the horse's foot was placed upon it, at the same time the other leg was held up, and the animal mounted. In this position the foot continued until the gutta percha had hardened by cooling, a process which was facilitated by the application of cold water.

The mould was then removed, and a plaster cast taken therefrom. Now, had there been any downward bending of the heels, this cast would have exhibited the same; but its under surface corresponded in every respect with the appearance of the foot

when held in the air, being perfectly level, and free from the slightest curve.

But not being content with this, and supposing that a different result might be obtained if the mould were taken *during action*, I had a bed of well-tempered yellow clay laid down. Then, having removed the fore shoes, and ascertained that the under surface of the crust was smooth and level, I rode the horse full trot over it, thereby taking the desired mould, from which another plaster cast was procured. Still the result was similar to the former.

With regard to the other questions involved, viz., lateral expansion and descent of the sole, with their corollaries, I must bring before your notice the result of a few experiments, which, though far short, in a numerical point of view, of those recorded in the pages of THE VETERINARIAN, still bear sufficiently upon the point to induce their publicity.

Having been engaged in some experiments relating to the application of vulcanized India rubber to the foot of the horse in the process of shoeing*, I found, for the support of the principles which I had advocated and advanced, it was necessary for me to have other data than the vague assertions of authors; and I consequently determined to satisfy myself upon certain points, more especially those of *descent of the sole* and *lateral expansion*, by direct experiment†.

Accordingly, having selected a horse with good and moderately concave feet, I proceeded to put my plan into execution.

A shoe was made, having two nail-holes on the inside, three on the outside, and one at the toe, behind the clip; its upper surface, around the seating, being perfectly level, so that an equal bearing was obtained throughout the whole extent, without the least spring at the heels.

Across the anterior part of the shoe, running from the inner edge of one side of the cover to that of the other, so as to pass directly over that portion of the sole anterior to the point of the frog, was firmly brazed a narrow bar of iron, of equal thickness with the shoe itself. From this transverse bar, on each side, near to its junction with the shoe, proceeded another bar, of equal breadth and thickness, in an oblique direction towards each heel of the shoe, whereto it was immoveably fixed. These lateral bars, of course, passed over that portion of the sole on each side of the frog. By this arrangement I had three iron bars traversing the entire sole, yet so disposed as to permit of its being distinctly seen in every direction. Through each of these bars three holes were

* A little Treatise upon which subject I beg your acceptance of.

† It is our intention to look into these experiments.—ED. VET.

drilled and tapped, and finely pointed stout wire pins, the eighth of an inch in diameter, adapted to screw into them.

Having the shoe thus prepared, and the pins ready for use, the foot, which had been stopped during the night, was thus prepared for its reception:—First, by having the lower surface of the crust made perfectly level, from toe to heel. The sole was then cleaned, not by being *pared*, as is usual when the horse is shod, lest such an operation should militate against the experiment, but simply the crumbling particles of the horn were removed, until a smooth surface was produced. The shoe was then nailed to the foot, great pains being taken to have the nails well drawn up. All being now in readiness, each pin (the end having been besmeared with tar) was separately screwed into its hole, with the point towards the sole, until the closest approximation, without actual contact, was attained. The other end was then cut off, and filed down level with the shoe. This was successively done with each of the pins, until the whole nine had been inserted. I had now an inverted *harrow* beneath the foot of the horse, and so immoveably fixed there, that, should the slightest descent of the sole take place, the points would perforate it, and not only shew that there was a descent, but actually register the exact amount upon each pin.

The horse then stood, and afterwards took a few steps in the forge, when the foot was examined; but no visible descent could be detected.

The horse was next, for a short time, put through the trot and canter, and brought in for examination. There was now no doubt about the matter. Each pin (though exactly at the same distance from the surface of the sole as when put in) had made its perforation: there were nine visible punctures. The sole had, during action, descended and receded.

The shoe being now taken off, and the pins examined, those at the side of the body, and those at the side of the point of the frog, shewed a descent of nearly the eighth of an inch! whilst those across the toe and those near the angles of the heels might have registered a little more than a sixteenth. This experiment was witnessed by several gentlemen of experience, who, together with myself, felt fully convinced of its value by the result.

Experiment II.—A common seated shoe was made, with the cover of the outside so extended in breadth as to project beyond the crust to the extent of half an inch, forming, when the shoe was placed upon the foot, a projecting ledge extending from the toe to the heel. Around the edge of this projecting side, a stout rim of iron, so strong as to be inflexible, was brazed. In length, this rim equalled, of course, the side of the shoe; in depth it was about an inch, and in thickness nearly a quarter of an inch.

The shoe, when applied, presented a rim of iron one inch high, running from heel to toe, around, and parallel to, the crust; leaving a space between the rim and crust of half an inch in breadth.

Six nail-holes were in the shoe, two around the toe and four around the inside; the outside, to which the rim was attached, being left unnailed.

The bearing surface of the shoe was perfectly level from toe to heel.

Six holes were then drilled in a row through the rim, as closely as possible to the upper surface of the shoe, in order that they should be opposite to the inferior circumferent border of the crust: these holes tended towards a common centre within the foot.

Above this row, and towards the heel, was another row of three holes. To the whole, finely pointed screw pins (of the same size as in the former experiment) were adapted.

The shoe having been firmly nailed upon the foot, each pin was screwed into its place until its point came into contact with the side of the crust. The whole of the pins having been adjusted, the horse was put into action with this lateral harrow attached.

I would have reversed this order of things, and applied my experiment to the inside of the foot, if possible; but it must be manifest that, so placed, the apparatus would have proved inconvenient, if not detrimental, to the horse during locomotion.

The result of this experiment was that each pin had caused a puncture, those at the quarter and heel having penetrated deepest, about the sixteenth of an inch, whilst the others seem to have entered a little less. Only one pin. (the most posterior) was inserted in the upper row, and this did not appear to have entered quite so deeply as those below.

I must here observe, that to this experiment the foot operated on was altogether unfavourable, being of a very hard and inelastic nature; so much so, that I feel convinced that more striking results would follow a second trial made upon a different subject.

I have taken the liberty of forwarding for your inspection the shoes used in these experiments, should you think the subject of sufficient import to induce you to favour your readers with an illustration*.

These experiments shew that there is a measurable descent of the horny sole, and therefore the existence of that pressure from the sensitive structures above (upon every motion of the animal) which has been considered auxiliary to the circulation of the foot.

* Mr. Reeve's descriptions of the shoes and their application appear to us so clearly intelligible, that any representation of the shoes seems supererogatory.—Ed. Vet.

Secondly. That there takes place, during action, a measurable degree of lateral expansion around the quarters and heels at the circumferent border of the crust.

One circumstance Mr. Gloag's experiments strikingly demonstrate, viz. that when the point of bearing is removed from under the heels only, as in the case of a "shoe much sprung at the heels," the superincumbent weight is sufficiently great upon the hinder portions of the foot to bend even the fibres of the horn; and this result of his experiments Mr. Gloag has considered to be "the natural action," and that whereby those indentations upon the old shoe were caused; and it is to provide for this action that he recommends his peculiar style of shoeing.

But having shewn, by experiment, that no such action takes place when the foot is perfectly unfettered, we may conclude that Mr. Gloag was deceived by the illusive effect produced by placing the horse's foot in an unnatural position; and from hence inferring the great amount of weight that it is designed the hinder portion of the foot should support to the relief both of ligament and tendon, we may form some estimate of the danger of depriving it of those adequate means of support which unerring Nature has so amply provided.

But as there is little merit in quarrelling with a theory unless one has something to offer in return, I beg further to observe, that, with respect to the aforementioned depressions upon the heels of old shoes, I have been led to speculate an opinion myself, from having the circumstance forcibly brought under my notice whilst carrying out certain details connected with the application of vulcanized India-rubber. The descending heels, at first, nearly conquered my ingenuity; but this inconvenience having been overcome, I had a little leisure to consider its cause.

I had ever considered the inequalities at the under and posterior part of the foot principally designed to give security to the footing; the whole to form a natural "break," by which the animal could arrest his flight when in full career, or save himself when in danger of slipping.

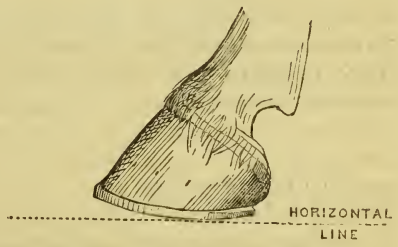
This instrument of safety consists of the two angular inflexions of the crust (which are both hard and sharp, and, in the well-grown foot, descend slightly below the level of the frog), first entering the ground, and forming two lateral holdfasts; the vomer-like frog, and concavities of the commissures.

As this apparatus is placed posteriorly, we may very rationally conclude that the horse, upon the least danger, would instinctively have recourse to the hinder part of his foot, throwing the weight where it would be of most service. And how often in a state of domestication, especially upon our paved and wooden roads, has

he occasion to seek its aid! It is no argument to say that the parts are covered, and he cannot avail himself of them. Instances are incessantly occurring, where, to prevent his falling, the horse will slide yards upon the heels of his shoes.

It is to this instinctive effort to obtain a foot-hold that I attribute the depressions which are found upon the old shoes, and not to any natural bending, such as would be indicated by Mr. Gloag's experiments. The horse has the power of depressing his heels when there is a necessity for the action; but I believe such depression does not take place in ordinary action, unless it be of necessity called into play as a collateral security in periods of emergency.

In ordinary practice, to provide for this natural action of the horse, I recommend that not only the upper surface of the heels of the shoe, but the under surface also, be slightly and gradually bevelled off in such a manner and degree only, that, were the horse standing upon a perfectly level surface, two angular spaces should present themselves; a superior, between the heel of the hoof and shoe, capable perhaps of receiving a flattened straw; and an inferior, somewhat larger, included between the under surface of the heel of the shoe and that upon which the horse was standing. This shoe (which is represented in the annexed cut) not only relieves the heels from pressure, by throwing the weight upon the quarters, but permits the foot to assume the required degree of obliquity whenever the horse throws himself upon his heels; and this without either bending the fibres of the horn, springing the nails, or producing concussion at the posterior part of the sensitive structures.



I need scarcely qualify these remarks by observing that many cases will present themselves requiring great modifications of this plan; but to the practitioner this will be thoroughly understood.

Having, then, before us such incontrovertible facts, viz. the descent of the horny sole, and lateral expansion of the heels and quarters, together with some idea of the great amount of the animal's weight which the hinder part of the foot is called upon to support, can it be further necessary to insist upon a plan of shoeing which shall provide for each of these actions, and at the same time admit of that depression of the heels which the horse has the power of accomplishing?

I may add, that I avail myself of the combined advantages of the seated and unilateral shoe upon which to apply vulcanized India-rubber, for giving to the base of the frog a degree of support, and affording a yielding resistance to the voluntary action at the heels, of which I have previously spoken.

Apologizing for this great encroachment upon your columns,
I beg to subscribe myself, Sir,
Your's faithfully,
W. G. REEVE, *M.R.C.V.S.*

1, Elizabeth-street, Eaton-square.

TWIN LAMBS CONJOINED—*(Lusus Naturæ).*

By Mr. GEORGE LOWTHER, *M.R.C.S.*, 3, *Nelson-street, Hull.*

December 17, 1849.

Sir,—SHOULD you deem the following extraordinary case of twin lambing (with sketch) sufficiently interesting for the pages of THE VETERINARIAN, you are at liberty to publish it in your scientific Journal.

I am, Sir,
Your obedient servant.

W. Percivall, Esq.,
Editor of "The Veterinarian."

A few months ago a two-year-old ewe, the property of Mr. Thomas Dibb, jun., of Sporathy, near Holderness, in this county, produced a lamb, or rather twin lambs, preternaturally united at the thorax. This strange phenomenon or freak of Nature may be thus described:—One head, four ears, and two eyes; no mouth nor nostrils, nor the slightest mark indicative of their locality. From a sort of duplex thorax diverged, *vis à vis*, two separate carcasses, forming, together with eight fully developed legs, two distinct and perfectly natural lambs. This being the ewe's first product, to facilitate the parturient process she was slaughtered. As respiration was impracticable, the lamb or lambs lost, of course, their vitality immediately after their separation from the mother.

Mr. D. having forwarded the novelty for my inspection, I subjoin the following particulars:—Length of lamb, from centre of median line between the eyes to tip of os coccygis, twenty inches. Length of twin lamb, from junction with fellow to extremity of os coccygis, thirteen inches.

Circumference of lamb around thorax seventeen inches, across the loins nine and-a-half inches. Circumference of twin lamb around thorax eighteen inches, across the loins ten inches.

Each auricula was bipennated with a single meatus externus, so that this development was not strictly preternatural; the lambs possessing, in fact, two ears only. The contents of the thorax and abdomen in each were perfectly natural, if we except the bronchi, which had a common termination. The circulatory apparatus was bi-cordial; consequently the vitality of each, in utero, would be maintained quite independently of the other.

TETANUS APPARENTLY CAUSED BY INTESTINAL CALCULUS.

Sir,—If you think there is any thing interesting in the following case worthy of a place in your valuable Journal, it is at your service.

I am, Sir, your obedient servant,
N. J. Henens.

On November the 6th last, I was sent for to attend a horse, the property of a gentleman farmer, that had been unwell two or three days previous to my seeing him. It was an aged animal—nearly twenty years old.

The horse was suffering, as I supposed, from idiopathic tetanus, not finding a wound or any thing to induce me to believe it was traumatic. The disease was so far advanced that it was with difficulty we could get the horse out of his stall. The general symptoms were analogous to those of acute tetanus; and so I gave the owner little hopes of saving him. I bled, and administered strong cathartics and antispasmodics, with the tobacco enema, &c., without any good effect. At length I advised the owner to have the horse destroyed, which he accordingly did.

Two days after, being informed a ball was found in the intestines, I called, and saw a portion of the colon which was left for me to examine, from which the ball had been taken. It was very much thickened, was streaked with inflammation, and spotted with ecchymosis. I could not tell the exact situation of the stone, as there was but a small portion of the gut kept for me to inspect. The horse had never shewn any enteritic symptoms; on the contrary, always had been a very healthy animal.

The calculus was perfectly spherical, and so highly polished that it resembled the chestnut just slipped out of its shell. It weighed twenty-one and-a-half ounces avoirdupois, and measured three inches and three-eighths in diameter.

Hayes, Jan. 8, 1850.

OBSERVATIONS, CASES, &c.

By W. Cox, *M.R.C.V.S.*

The Danger of administering Drenches through Bottles instead of Drench-horns.

Your correspondents have at different times brought before your readers the danger of giving drenches to animals. In The Veterinarian for September 1848 there is a communication from myself, wherein I endeavoured to impress upon the minds of your readers that a bottle was more dangerous to use than a drench-horn. The following case will in part prove this:—On the 30th of April last, J. Goodwin Johnson, Esq., of Mappleton, requested my attendance on a cow that was making foul water (red-water), for which I was to take with me the necessary remedies. I found the symptoms not very aggravated or acute. There was no palpitation of the heart; the pulse was 80 per minute; her breathing tranquil; and there was no grunting or groaning. She stood up, eating a little hay: her urine was the colour of dark porter. Being very busy at the time, I left an astringent draught, to be given in warm water, immediately, by Mr. Johnson's men, and an active purge to be administered an hour afterwards. After leaving directions as to regimen, &c. I departed. Mr. Johnson during the while was present. On my return, I called to see the cow, and found her dead. On making inquiry, I found the draught had been administered with a bottle. She was unwilling to take it, and hoosed several times during the operation, and as soon as this was over became very ill. Seeing this, they did not wait an hour before the purge was given, and by this haste completed her destruction. I had no hesitation in telling Mr. Johnson's men that the medicine had gone down the windpipe, and that thereby the animal had been suffocated. I expressed a desire to see her opened.

On the following day, May 1, I was privately informed that the cow had been sent in a cart to one Mr. Cope, a practitioner in this place, no communication of any such proceeding having been made to me. Now, this person is one of a class which are imposing upon the people in this country by calling themselves "veterinary surgeons," while they are no such thing. This gentleman has never passed the College. Availing myself of my private information, I attended, and I took in with me Mr. Charles Souter, a smith and farrier, a person who has done a good deal of cow doctoring in his time, but is now advanced in years.

Post-mortem examination. — All the internal viscera were

healthy, except a small portion of the ileum, which was slightly inflamed. The kidneys were likewise enlarged, and their internal structure diseased, and most so in the cortical portion. On exposing the mucous membrane of the larynx, trachea, and bronchial tubes, it was found quite black, and their canals were filled with frothy fluid, containing evidence of the medicine, and also small bits of masticated hay, both of which had collected within the bronchial tubes. There was likewise a collection of partly masticated hay within the larynx, nearly as large as my fist, which the animal in her agony had endeavoured to swallow, though, from the paralysed state of the epiglottis, it had "gone the wrong way," clearly proving the animal had died from suffocation, arising from giving the medicine out of a bottle. During the post-mortem examination, no Mr. Johnson or Mr. Cope made their appearance. Cope saw the carcass after I was gone.

This will be another fact added to those already recorded by you, to shew that no draught can be given to an animal without danger, unless the pump were to be used. This case likewise strengthens my opinion, as recorded in your September Number for 1848, viz. that a horn is far preferable to a bottle.

If I had not been well established in my practice, and determined likewise to see this animal opened, this case might have turned out my ruin, in consequence of Mr. Johnson's standing being so high, he being one of the magistrates of this district. It is my opinion that these two gentlemen intended to have brought me in culpable, perhaps of poisoning this animal; for they were evidently chagrined, and are, even to this day, at the course I pursued. I hope you will insert this, entire, in your Journal, as a warning to young men to make post-mortem examinations in such cases, and to take witnesses with them. I have every reason to believe, had I been accompanied in the post-mortem examination by a professional person, that the affair would have been set right between my employer and me; but it is not so. I was told by Mr. Johnson, a short time ago, and not in the most agreeable manner, that I was altogether "wrong" about his cow.

Your's most respectfully.

*** This narrative contains an extremely hard case. Surely Mr. Johnson will not accuse Mr. Cox of the death of his cow. Mr. Cox, it is true, acted perhaps injudiciously in not administering the drench with his own hands; but it was Mr. Johnson's men that caused the cow's death.—ED. VET.

A Pig choked by a Fish.

(An Extraordinary Case.)

A man employed by F. Wright, Esq., of Osmaston Manor, a short time ago, was sorting some store-fish out of one water-can into another, when he cast one of them alive into the pig-sty where a fat pig was. Instantly he heard the pig make such a singular noise as induced him to look into the sty, where he perceived the pig stretched out, apparently dying. Immediately the knife was called into requisition,

> " When out gushed his life's gore,
> And copiously stained the sandy floor.

Mr. Gamble, farm-bailiff to F. Wright, Esq., opened the pig, or rather made the post-mortem examination; when, behold! Mr. Fish was found head first at the bottom of the windpipe, where it divides into the bronchi, as dead as its greedy devourer.

A Bull destroyed by a Drench of Spirits of Turpentine and Gin.

In the summer of 1848 Mr. Critchlow Waterhouse had a bull a little fired with desire for copulation, for which the owner administered some ol. tereb.: the quantity was four ounces, mixed with four ounces of gin. Although the animal was a healthy one (with the exception above-named) when they began to drench him, before all the dose could be administered he was as dead as a stone.

Spirits of turpentine and the other essential oils should never be given to animals without being diluted with some one of the fixed oils. I have known cases where ol. terebinth. has caused instantaneous death, even though mixed with water before it was administered to the animals.

Your's most respectfully.

Ashbourne, Jan. 14, 1850.

Remarks on Regular and Irregular Practitioners.

By the same.

I do not call those persons impostors or pretenders who are practising in their true colours as "farriers" and "cow-doctors," but those who puff themselves off as "veterinary surgeons" without having passed the ordeal which qualifies them as such. During my career, I have met with several sensible and honourable men who have called themselves "farriers" and "cow-doctors," though such characters are very rare. Would you, or any of your readers, dare to trust themselves, when sick, in the hands of a surgeon ignorant of anatomy, ignorant of chemistry, and ignorant of physiology? When the practitioner is ignorant of these, his pathology must be deplorable stuff. But horses and cattle, some say, have no souls to save. Be it so. It is my opinion that owners of stock are gradually becoming more and more awake to their best interests, and are preferring the regular educated veterinarian before the farrier and cowleech. Let us, then, be more united among ourselves. The plan, as before suggested, of inserting in the county papers, once a year, the names of the veterinary surgeons in each respective county, ought to be followed; and, likewise, a list of their names sent annually to the judges at the county courts in each county.

DOG-DOCTORING BY DOG-FANCIERS.

To the Editor of "The Veterinarian."

Sir,—Will you allow me to ask your opinion in the following cruel case? My object in asking it of you is to expose what I consider cruelty to animals by men calling themselves "dog-fanciers."

Case.

I had a most beautiful small Scotch terrier, four years and a half old; parturition went hard with her. She burst her water at eleven

o'clock on Christmas morning, and by Wednesday night had had no pups; when a dog-fancier proposed with the right finger, the middle finger (and such a size it was), to deliver her of the pups, whether dead or alive, by introducing it into her. Failing in doing this, he used a steel instrument, having more the appearance of a pick-lock. The following is a sketch of it:—

B represents a sharp-pointed crook, which he thought to hook into the head of the nearest pup; A is a ring which he held to pull the pup out with; the crook he put on the top of his finger to introduce it into the womb of the dog. He brought away in this manner half of the head, and afterwards a gut-like piece of flesh, having the appearance of some part of her inside. I think it was this that killed her. Her cries were pitiful to the extreme, yet she never attempted to snap: she was good natured with all. She died the same evening, was opened, and the pups were found lying across each other. They were only two in number; and I account for their being so placed from the circumstance of his using so much force with his left hand on her ribs to push the pups more forward. He never practises this plan with his own bitches! I have since ascertained this fact.

I remain,

Your obedient servant,

J. B. H.

QUERIES.

1. Was it wrong to let her have pups at four years-and-a-half old, never having had them before; and would it not have been better to let Nature take its own course?
2. Supposing she had had no pups a week after bursting her water, and that the pups were dead in her at that time, and we will say they were both putrid by that time—could she have brought them forward, and have lived afterwards herself?
3. Are the means usually resorted to in difficult parturition, of opening the bitch, to *save her* or *her pups*, and is the operation usually attended with success in the case of the *former?* Would you be kind enough to tell me in what veterinary work I shall find a similar case reported?

Treatment.—On the evening of the first day she had ergot of rye pills with ginger—two grains each—every hour, a dose of castor oil having preceded the first dose.

A warm bath on the second day; refused all food, but great thirst. Nothing remained on her stomach, or passed through her.

Proposed giving her a clyster, but the dog-fancier would not countenance the idea. Would it not have been better, instead of introducing the instrument or middle finger, to have used the *thumb* and forefinger with lard, to widen the passage, or to break open the way? J. B. H.

Answers to the Queries.

The age was no objection to the bitch having pups, notwithstanding she had never been pregnant before. Prior to any sort of operation being resolved upon, it is the business of the accoucheur to ascertain whether the fœtus be alive or dead, and what power the mother yet retains to bring it forth; in this she may be assisted by medicine—in particular by the ergot of rye.

It being certain that she cannot bring forth without surgical aid, the finger, or finger and thumb, according as required or as practicable, may be employed. These failing, the *blunt* hook or crochet may be tried, or the forceps. Such a dangerous instrument as is described by our correspondent would in no case be justifiably made use of; particularly by hands apparently so incompetent as those that held it in the case in question. "The piece of flesh" brought away was probably part of the *placenta*, and the bitch seems to have sunk through hæmorrhage.

The catastrophe will be a warning to J. B. H. another time to resort to *professional* aid. "Dog-fanciers" are not necessarily "dog-doctors." They may be compared to grooms, who pretend to know as much about the horse in sickness as in health, and so impose upon their unwary employers; either killing the animal through maltreating his diseases, or ruining him for life, through mistaking the seat and nature of his lamenesses. This may be getting veterinary medicine cheap; but the patients are very apt to suffer for it, and, in the end, their masters very apt to pay for it. We know of but one work, "The Dog," by Youatt, which contains any account of such cases. Ed. Vet.

ON EXAMINATIONS FOR A VETERINARY DIPLOMA.

By J. S. GAMGEE, *M.R.C.V.S., London.*

DURING the last two sessions in which I was a student at St. Pancras, the approach of the yearly examination was the topic of anxious inquiry, in consequence of the existence of the apprenticeship clause in the By-laws, by which all those students who had not a legalized certificate of three years' apprenticeship were excluded from the right of examination after two years' attendance at College. In 1848, the Council of the Royal College of Veterinary Surgeons were pleased to suspend that by-law, *pro tem.*, in compliance with the petition of a large number of students. In 1849, it was with great difficulty that the candidates for examination could be registered, as demanded by law. In both these instances the students were the compromised party. That this should be the case certainly was not just; but I shall not stop to inquire who were the culpable parties, whether the Professors at St. Pancras, or the Council of the corporate body. I shall start by forgetting all the past mismanagement and party spirit which have so long distracted the members of our profession, and shall, in the name of peace and justice, raise my feeble voice in order that the proceedings which have, of late, so materially impeded the veterinary students' progress be not again enacted. I mean, that the class of students be not made the sufferers of personal or party ill-feeling, but that their education be so conducted as to ensure their entrance into professional life with a stock of sound knowledge.

It is irrelevant to know whether or not the apprenticeship law is again to be enforced; but I shall limit myself to the fact, that a law which was intended as a guarantee for the abilities of young men entering the veterinary profession has been, if not suspended, at least never enforced; and I now purpose to inquire into the precautions taken by the Board of Examiners to admit such men only members of the profession as are fitted to do honour to themselves and justice to the public; and to remand all others who have only acquired a superficial and imperfect knowledge, and who are, therefore, not competent to practise the veterinary art.

The branches of medical science professed at the veterinary schools of London and Edinburgh are, anatomy, physiology, chemistry, materia medica and pharmacy, medicine and surgery as applicable to the horse, ox, and other domesticated animals. All these branches are of undoubted importance in a medical education, and it is therefore necessary that the students' proficiency in each of them be tested. For this purpose the Council direct that

the candidates for a veterinary diploma be submitted to one hour's examination; one quarter of which is devoted to anatomy—the active examiners in this department being two members of the medical profession. However much I may feel grateful to that profession of which a Coleman, a Bell, an Astley Cooper, were members, I must assert my conviction, that surgeons, however distinguished in the wards of a human hospital, cannot be qualified to examine on the descriptive anatomy of the horse, unless the structure of this animal has been practically examined by them. A human anatomist may, by analogy, examine on the general points connected with the structure of the digestive and respiratory organs, of the eye or nervous centres, and inquire into the peculiarities of the digastric or superior oblique muscles (of the eye); but this is not the anatomy which is most needed to constitute the usefnl veterinary surgeon. It is the relative position of the tendons, ligaments, bloodvessels, and nerves in the extremities; the structure of the foot; the relative position of parts in the perinæum, and the anatomy of the generative organs: this is the anatomy with which the student should be thoroughly acquainted; and none can test his knowledge of it but those who have examined those parts with the scalpel.

In general anatomy and physiology, I believe I am correct in stating that the pupils are never examined. I do not believe, with some, that all pathology is founded on physiology alone; but certainly I hold that the nature and treatment of disease cannot be scientifically and therefore profitably investigated, unless the normal functions of the parts liable to disease be previously studied. It is extremely desirable that those whom I address may not imagine that I am forming too high a standard for the education of the veterinary student. It is not necessary that in an examination he should give proof of intimate acquaintance with all the theories in physiology, which, from Haller to our day, may have been propounded on any particular subject; but I should deem it indispensable that a veterinary student had a correct knowledge of the movements and sounds of the heart, the functions of respiration, digestion, secretion, absorption, and of the nervous system, because such knowledge must inevitably prove serviceable to him in the study of pathology.

To be examiners in physiology none are more fit than members of the medical profession; and such is the uniformity of functions in the higher classes of animal beings, that they would not be so liable to be deceived from false analogy as in the case of anatomical details; and while we should be deriving real advantages from the co-operation of medical men as examiners in physiology, an ample guarantee would be afforded to prove that we are as anxious as ever (if not more so) that the professions of human and veterinary

medicine be cordially united, in order that the latter may continue to derive from the former renewed supplies of that scientific knowledge which has so materially contributed to raise veterinary surgeons to their present position, and which veterinary students must seek after, if in future life they be desirous of gaining honourable repute and benefitting mankind.

I have been thus prolix with reference to anatomy and physiology, because these foundations of a veterinary medical education have been well nigh totally neglected; and I beg respectfully to urge upon the Council of the Royal College of Veterinary Surgeons the necessity of making, for the future, such arrangements in the system of examination as may obviate the danger, not only of pupils, but perhaps even of teachers, treating those departments of science lightly, because the candidate for examination is not tested on them before he is granted a legalized diploma.

To chemistry, materia medica, and pharmacy, is devoted another quarter of the hour appointed for the examination. With due deference to the eminent men who are examiners in those sciences, the practical value of the examination appears doubtful. The majority of the questions are on chemistry: in pharmacy only such points as the preparation of calomel or tartarized antimony are touched upon; and in materia medica, as applicable to the horse, the pupil's knowledge is seldom, if ever, tested. I am here prepared to meet the objection that, even in the quarter of an hour appointed, the pupils by no means give evidence of proficiency in chemical science, and that a prolongation of the time would only demonstrate deficiency to a greater extent. This probably may depend on the system of instruction. Chemistry, materia medica, and pharmacy, are professed at St. Pancras by a teacher who delivers three lectures weekly, viz., at utmost, seventy-two lectures in the whole session. In such limited time, it is impossible to impress the principles of those sciences on the pupil's mind with any degree of advantage. In expressing this conviction, I am not unmindful of the fact, that to the present teacher in these departments at St. Pancras is due the merit of having first established lectures on those sciences in the veterinary schools of Great Britain. But while we are grateful for the past, we are nevertheless anxious for the future. The instruction imparted ten years since is not sufficient at the present day in any branch of science, but especially in chemistry, which has surpassed all other branches of human knowledge in the rate of its progress. Moreover, it is not unreasonable to presume that any limited system of instruction which might have been admissible when chemistry and pharmacy were first professed in a veterinary school, should be improved and extended as experience and necessity dictate.

In the half hour which remains after the pupil has been examined in anatomy and chemistry, his knowledge is tested in pathology, as applicable to the horse, ox, and other domesticated animals; the anatomical peculiarities of the latter being at the same time made the subject of consideration. Premising that the examiners in these departments deservedly occupy the foremost rank in the veterinary profession, it is equally true, that, to test the candidate's theoretical and practical knowledge in those branches, the time allotted for examination is not sufficient. To presume that such a number of questions as are calculated to test the student's proficiency in the anatomical characteristics of ruminant and carnivorous animals, and in the nature, symptoms, and treatment of one or more of the diseases to which they and the horse are liable, can be put and answered in thirty minutes, is an improbable hypothesis. Should it be argued that, at the College of Surgeons, gentlemen are submitted to only one hour's examination, and therefore that time should be amply sufficient at our Board; it can be replied, that the whole hour is in that case devoted to anatomy, physiology, and surgery; and though a man may honourably acquit himself on these points, he is not allowed to practise medicine and surgery, and to dispense the necessary medicaments, until he has been examined on medicine, chemistry, materia medica, botany, &c., at Apothecaries' Hall; at which institution power is vested in the examiners to extend the examination to an unlimited time, until such time as the candidate shall have given proof of his general proficiency.

But there are other points on which the candidate for a diploma should be tested by the veterinary surgeons of the Examining Committee: I allude to the principles and practice of the art of shoeing; and to that important subject, "Examination as to Soundness." To include these, time certainly will not permit; and, yet, who will deny their importance? With regard to the former subject, some persons may urge, that a man devoted to science cannot be supposed to be the practised farrier. But I do not wish that such should be the case; however much it may be desirable that every veterinary student, at the completion of his studies, should be well acquainted with the principles of shoeing, and, by close attendance to a forge, have become acquainted with the peculiarities of shoes applicable in different kinds of lameness; and be able himself not only to suggest, but to carry into execution, such measures as may be devised to relieve the animal's sufferings in cases of emergency. Lamenesses are, on the whole, more numerous than any other forms of disease for which the veterinary surgeon's aid is sought, and they are, perhaps, the most tedious and difficult to treat; and unless the practitioner be able to treat with

success foot diseases, as well as affections of other organs, he has no claim to the title of being the reliever of the sufferings to which the horse is liable.

The many controversies on horse warranty, of which the courts of justice in this country are so frequently the scene, obviously demonstrate how great should be the importance attached to veterinary jurisprudence. But so far from this being the case, not only are the examiners commonly silent on the subject, but even the veterinary professors do not include it in their courses of lectures. Veterinary jurisprudence is certainly an uncultivated branch of our science; but if those men do not engage in its cultivation who are expressly selected and adequately paid as teachers, is each private practitioner supposed to dedicate his time and talent to the task? The veterinary profession is said to be in its infancy; and so it is likely to remain, unless its professors endeavour so to educate their pupils as may enable them to confer increased benefits on the public, and by talent and real merit raise the science they profess to a level with other branches of human knowledge.

Reviewing the preceding observations, we may arrange them under two heads: 1st, we respectfully direct the attention of the Council of the Royal College of Veterinary Surgeons to the propriety of extending the system of examination; 2dly, we call on the professors of veterinary science to lend their valuable cooperation in reforming that grand basis to which every science must look as the criterion of its future prosperity, "Education." With reference to the former point, the Council would reap direct advantages from the proposed reform. They would give to the public the most ample proof that the powers vested in them were exercised in the best manner calculated to insure the welfare of the veterinary profession; and by abolishing all prohibitory laws of entrance on the career of a veterinary student, and establishing stringent measures to regulate the admission of members in the veterinary profession, they would obviate all dispute in reference to that part of the Charter which refers to the "Curriculum of Study at the Colleges." Even admitting that the Council have no right to interfere on this point, they certainly have a right to exercise their prerogative in testing the abilities of the men educated at those colleges, when presenting themselves as candidates for a diploma. The institution of a fair system of examination would, moreover, preclude the chance of another Board of Examiners being called upon to grant diplomas to practise; because the public would soon become aware that the distinctive characteristic of members of the Royal College of Veterinary Surgeons was that of having undergone such an examination as guaranteed beyond all suspicion their talent and practical skill.

With reference to the second point, painful it is to admit that

already an indisposition has been evinced on the part of the constituted authorities to admit any interference in reference to the plan of veterinary education. But we are quite willing to believe that advice may not have been taken, because inopportunely if not improperly given. It is not radical change which is required, but gradual and pacific reforms. Durable good is not the result of casual or instantaneous influences, but can only be the consequence of wise and prudent measures, for the development of which time and unanimity are required. Accordingly, it is not a hasty change in the plan and nature of veterinary instruction which is to be anticipated or desired: but it is to be hoped that the Professors will steadily follow the path of improvement; not availing themselves of the miserable shelter afforded for the evasion of responsible duties by the despotic government of an institution, but devoting their talents and energies to the public good, with the sure conviction that by such conduct alone can durable repute be acquired.

While I strongly advocate a more complete and extended system of examination than that to which candidates for a veterinary diploma have hitherto been subjected, I cannot too forcibly express a conviction that such a change can only be effected with real advantage gradually, and by the concurrence of the teachers of veterinary science and the Council of the corporate body. This co-operation is indispensable, because the extension of the system of examination and of collegiate education are inseparably related to each other: the former must fail unless the latter progress; and while the period and nature of the examination require modification, so do the period and nature of the veterinary education. Not only is much to be desired in the time already devoted to study at the veterinary colleges, but even the period of such study requires extension. Two sessions of six months each are by far too limited time to complete a scientific education; and a longer time must be devoted to study, in proportion as the instruction becomes more complete and perfect.

In conclusion, we solicit the forbearance of our readers, if we have been more prolix than even we, at first, intended; and of the Council of the Royal College of Veterinary Surgeons, and of the Professors at St. Pancras, if we have dared, thus early in life, to urge such palpable and important truths upon their notice. The evil was too evident to be allowed to continue undisturbed. It is the rising generation which is suffering from past mismanagement; and therefore every reasonable and prudent effort in their power should be directed, by the combined professors and legislators of the veterinary profession, to confer upon its rising members that which alone can render them useful, esteemed, and honoured, i. e. "A Scientific Education."

J. S. GAMGEE.

London, 17th January, 1850.

REVIEW.

Quid sit pulchrum, quid turpe, quid utile, quid non.—Hor.

Recueil de Mémoires et Observations sur l'Hygiène et la Médecine Vétérinaire Militaires, *rédigé sous la Surveillance de la Commission d'Hygiène, et publié par Ordre du Ministre de la Guerre. Tome Deuxième.* Paris, 1849.

Memoirs and Observations on Military Veterinary Hygiene and Medicine, *compiled and arranged under the Superintendence of the Sanitary Committee, and published by Order of the Secretary at War.* Vol. ii, Paris, 1849.

[Continued from vol. xxiii, page 37.]

We must confess the thought has crossed our mind oftener than once that the medical and veterinary officers of our army are less zealous than they might be expected to be in assuming the characters of contributors to the common stock of professional knowledge. Considering the leisure time they in general have on their hands, parts of which at least, one would imagine, they could hardly devote to a better, and we will add, a pleasanter purpose, than the improvement of the art they practise, the professional public seem led to expect more from military surgeons and veterinary surgeons than from others. The French government appear to have felt some such lack of zeal in their own medical and veterinary departments; and so, with the view of rousing the members of each into increased activity, have directed, through their Secretary at War, that there shall be annually submitted to veterinary surgeons, now, as well as to surgeons in the army, series of questions for solution, in medicine, surgery, pharmacy, and hygiène; awarding to that officer who shall give the most satisfactory or laudable answers thereto either a gold or a silver medal. This is no more than certain learned and other societies are in the habit of doing in our own country, whenever they desire information or enlightenment on certain abstruse or uninquired-into points of

science or art. And it seems to us a measure so well calculated to meet the end it has in view, that we should rejoice to see some regulations of the kind introduced into our own military medical and veterinary departments. We have already had implanted into the subordinate ranks of our army emulative honours in the shape of good-conduct stripes, and meritorious-service pensions and medals; and so far as the experiment has been tried, the honorary introduction appears to have worked well. It is true, that veterinary surgeons of the British army will bear no sort of comparison in point of number with those of the 60,000 cavalry of the French; but then our cavalry horses are more valuable than theirs—of more consequence therefore to the state to have preserved: added to which, a prize essay once a year from the army veterinary surgeons might prove no ordinary fillip to professors of hippiatric science in general.

The reader will remember that the FIRST VOLUME of these "Memoirs and Observations" came under our notice last December; and that we then culled some useful extracts, as lengthy as our space would on the occasion admit, cutting our account short, through compulsion, by promising at some future time to look over the veterinary prize essay, to which the gold medal for the year was awarded, on the subject of "Farcy." This we still mean to do. But, that we may not break through the thread of our present inquiry, it will be imperative to proceed, first, with

THE SECOND VOLUME.

This commences its "Introduction" with the announcement that "the grave events of 1848 have not hindered the Sanitary Committee from accomplishing the mission intrusted to them by the Secretary at War. In the midst of the general tumult its business has never been suspended; insomuch that they feel no hesitation in declaring this (their) Second Volume to be nowise inferior to the First.

The veterinary surgeons' reports shew a notable diminution in the mortality of the horses of the cavalry, it having fallen during the last year from 97 to 64 per 1000; while they afford reason for hoping that this diminution will be still greater, thanks to the amelioration of the stables, and to the improvements made in the

feeding, both as to quality of the food and the substitution of one kind for another.

Other inquiries have occupied the attention of the Committee, such as the digestion of the horse under the influence of repose and exercise; the time a horse can endure abstinence without losing his requisite strength, &c.

The gold medal this year was not awarded. The paper to which the silver medal has been accorded, without being destitute either of talent or knowledge, is wanting in precision in the statement of its facts, and carefulness in the deductions drawn from them.

The Committee expect much from the Concours of 1849. In proposing for subject of discussion, *the breeds of horses in France, with special reference to the remount of the army*, they entertain no doubt of the decision of the much-disputed question, whether the introduction of pure English blood into France has bastardized our breeds, or whether, on the contrary, it has improved them.

Analysis of the Reports of the Army Veterinary Surgeons in reference to the Hygiène and Diseases observed, from the 1*st of January* 1846 *to* 31*st December following.*

Passing over the first question, which calls for "a typographical and medical description of the garrison and cantonments" occupied by the respective regiments; and over the second question, requiring "a description of the stables, as to their aspect, their interior fitting, the nature of the soil, and what they contain;" and over the third question, comprehending "the nature and nutritive qualities of the different forages issued (hay, straw, oats, barley or barley-meal, bran, and the artificial grasses) and their ordinary supply;" and over the fourth question, which inquires about the giving and the effects of green-meat; and over the fifth, which inquires into the nature of the different waters the horses drink, with their chemical composition; we at length come to the sixth question, under which are comprehended the following tabular statements:—

Statement of Diseases observed among the Horses of the French Army, from 1st Jan. to 31st Dec. 1846.

Totals of Cavalry, Artillery, and Waggon Train.

Diseases.	Remaining in the Infirmary on the 31 Dec. 1843	Admissions	Cures.	Deaths or Slaughters.	Remaining in the Infirmary on the 31 Dec. 1846	Losses per 100 Diseases.	Mean Effective.	Losses per 1000.	Entries at the Infirmary during each Quarter. 1st.	2d.	3d.	4th.
Chronic Glanders	212	1389	254	1207	140	82·6	41,793	27·33	337	383	392	277
Acute ditto	11	287	20	271	7	93·		6·33	64	69	77	77
Farcy	93	635	592	74	62	11·		1·55	163	160	158	154
Pneumonia, Pleurisy, and Hydrothorax..	289	2486	1927	618	230	20·		14	570	648	697	574
Other Diseases	1069	14,706	14,263	509	1003	3·2		11·8	3064	3820	4217	3605
Totals	1674	19,503*	17,056	2679	1442	13·5		64	4198	5080	5541	*4684

Losses of Horses according to Age.

Totals of Cavalry, Artillery, and Waggon Train.

	4 yrs.	5 yrs.	6 yrs.	7 yrs.	8 yrs.	9 yrs.	10 yrs	11 yrs	12 yrs	13 years & upwards.
Glanders { Chronic and Acute } ..	22	110	245	161	162	156	188	155	150	159
Farcy	4	8	12	9	5	7	9	9	3	8
Pneumonia, Pleurisy	58	74	84	64	49	57	60	54	49	72
Other Diseases	18	45	49	43	45	40	58	60	60	95
Totals	102	237	357	277	261	260	315	278	262	334
Mean Effective	2582	3891	4232	4047	3306	3830	4632	4620	4358	6245
Losses per 1000	63	62	83	67	77	54	67	60	60	54

Losses per 1000, per Age, and per kind of Disease.

	4 yrs.	5 yrs.	6 yrs.	7 yrs.	8 yrs.	9 yrs.	10 yrs	11 yrs	12 yrs	13 years & upwards.
Glanders { Chronic and Acute } ..	8	28	57	48	48	40	36	33·5	35	25
Farcy	4·6	2·3	2·8	2·2	1·4	1·8	1·9	1·9	9·68	1·2
Pneumonia, Pleurisy	18·1	19	18	13·3	11·7	14	12	44·7	11	11
Other Diseases	6·	11·7	11	15	15	10·5	12	12	13	14

NB.—Of 1601 glandered horses, 212 have been treated.
Of 702 with enlarged glands, 244 have become glandered.

Entries during the half years ..... { of Summer 10621 / of Winter 9882

Excess of Summer over Winter 739

* These figures are wrong in the original.

Horses Cast (out of the French Army) in 1847.

Motives for Casting.	Horses.	Mares.	Total.
Completely worn out	685	373	1058
Failures of Legs	311	188	499
Blind, Ophthalmics	83	77	160
Fractures, Lamenesses, Wounds, Foundered...	267	230	497
Coma, Broken Back, Anchylosis	24	18	42
Phthisis, Nasal Gleet, Chronic Affections	217	187	404
Broken Wind, Roaring, Bad Constitution	314	208	522
Restive	32	30	62
Crib-biters	12	3	15
Old Age	9	2	11
Divers motives	29	15	44
Total of Horses and Mares Cast	1983	1331	3314
Effective strength	23,448	18,286	41,734
Horses cast per 1000	84	73	79

Total of Horses and Mares Cast	3314
Mean Effective in Horses and Mares	44,734
Cast per 1000 of Horses and Mares	79

*** The British Cavalry cast to about one-eighth of their total number of horses annually.—Ed. Vet.

From these statements (which do not include the reports furnished by the remount depôts) we find that glanders has proved the principal cause of mortality, there being out of 2679 horses died or destroyed 1478 that have fallen victims to chronic or acute glanders.

Farcy has played but a feeble part in the mortality; since out of the said 2679 deaths there have occurred but 74 of farcy.

Next to glanders the diseases of the chest prove the cause of mortality, being 618 of the whole loss (2679).

In grouping all other diseases that have occasioned death we find remaining to their account but 509. This accounts for their diminished number as compared with the former year, as well as for their comparative light nature. Thus, out of 14,706 horses admitted for treatment for other diseases than glanders and farcy and diseases of the chest, there have been 4613 cases of injuries.

We believe we may point attention to a pretty considerable number of cases of cure of chronic and acute glanders. Out of 1544 cases of admission for chronic glanders in the course of the year, 254 have been discharged cured. The 5th Cuirassiers, 5th and 6th Chasseurs, and the 4th Brigade of Artillery, have been remarkable for their number of cures of glanders.

We have searched in vain for accounts of any particular treatment employed in these alleged cases, a circumstance which has induced us to opine that the asserted "cures" were either not cases of real glanders, or else that the temporary disappearance of the symptoms had been mistaken for recovery.

In respect to *chronic* glanders, we do not pretend to assert that, up to the present day, no cases of cure have been recorded. There are but few veterinarians who have not made some observations of the kind; nevertheless, experience has shewn hitherto that these cures have been generally independent of treatment.

In acute glanders, though success has been much more rare, still in certain regiments are cases of cure registered of this disease, none up to the present hour deeming it incurable.

In comparing the mortality with the number of effective horses, we find it to be in the ratio of 33 to 1000 for acute and chronic glanders, of 1.55 for farcy, of 14 for diseases of the chest, and of 11 for all other diseases. The general total being 64 per 1000.

During the summer half-year the admissions into the infirmary have shewn an excess of 739, that being the season for military manœuvres. It seems to us, the question might be put to colonels of regiments, whether some diminution might not be made in this number by increased attention to horse equipments, to feeding, to the different modes of manœuvring, to the exercise-ground, to the care the horses receive after field-days, &c.

Investigations have been instituted into the circumstances of the breed of horses in regiments, the barracks occupied by them, and the forage given to them, without eliciting, however, any thing satisfactory. Unfortunately, for many years it has been shewn that certain regiments have ever been unfavourably classed from their losses, whilst, on the other hand, others have always appeared in a more estimable place; and this has proved to have been the case under all kinds of circumstances. For example, one regiment shall

receive 400 horses provided by the same depôt, and that shall be one of the unfortunate regiments. Heavy losses shall fall upon these remount horses. The same horses, however, instead of going to this regiment, shall join one of the favoured class. The mortality among them now will amount to comparatively but little.

In estimating the mortality among horses according to age, we find the fewest deaths among nine-year-old horses, viz. 51 per 1000. Among those thirteen years old and upwards, 54 per 1000. The maximum of deaths occurred at six years of age, viz. 83 per 1000. Next to these come horses of eight years old, 77 per 1000. In the other ages the mortality has fluctuated between 60 and 67 per 1000. We have endeavoured in vain to shew cause for the surprising difference between the mortality of the eighth and ninth years, two periods seemingly so alike.

In the remount depôts, while glanders and farcy have proved less frequent, pneumonies and pleurisies have occurred in greater number, and been more fatal. The number of recoveries have, it is true, risen; but were these complete recoveries, and did the attacks of disease not leave behind them in the lungs and pleura marks of their former existence?

The first consideration in the health of a troop horse destined for quick movement is the integrity of his thoracic viscera. Slight lesion in these organs may prove of little consequence to a horse doing slow work, while it is apt to prove serious to one compelled to trot or to gallop. It is by no means uncommon to discover at the autopsies of horses that have died of glanders or diseases of the chest, old lesions in the lungs, lesions which, if they were not the occasion of these last and fatal attacks, have, at least, complicated them. And so we must be permitted to think, that a great number of horses, recovered of thoracic attacks at the remount depôt, have brought with them into regiments the forms of disease under which they have eventually succumbed. If such probability were rendered a certainty, we could understand how necessary it would be to cast from the remount depôts on account of diseases of the respiratory passages.

The admissions into the infirmaries at the depôts have been many more during the first than the second half year. Out of 5622

sick horses, 3476 entered during the first period, and but 2146 during the second; leaving an excess of 1330 for the former. This may be owing to the purchases being made principally in winter, which causes the number of horses actually in depôt to be much greater in the first six months of the year.

Tracheotomy Tube and Trocar, *invented by* T. W. Gowing, *M.R.C.V.S., Camden-town.*

That our science is not stationary, but that as we write the spirit of progress and improvement is actively at work among its members, no facts more clearly demonstrate than the repeated calls made upon us to notice novel inventions connected with the practice of veterinary surgery. Numerous, however, as have been the recent adaptations and additions made to our means of alleviating the sufferings of our patients, we yet think there remains a fair field on which ingenuity may be displayed. The pocket-case now in use sadly requires that some gentleman, as ready to conceive and as able to perfect as Mr. Gowing, should overhaul its contents, one-half of which are rarely employed, and the other half of which are too small to prove effective upon so large a patient as the horse. The French veterinarians long ago felt that the means at command were disproportioned to the end desired, and they have attempted to remedy the defect; but, unfortunately, while they obtained size, they did not likewise combine it with convenience, since a French pocket-case must strongly remind him who beholds it of a diminutive portmanteau. Thus, while greater magnitude is felt to be desirable, no greater bulk or weight can be tolerated; and how such opposite properties are to be made to harmonize, is a problem which those who are endowed with the mechanical skill possessed by Mr. Gowing alone can hope to solve.

We have, on former occasions, had to speak favourably of Mr. Gowing's talent for invention, and we hear excellent report of the practical advantage gained by the teeth-instruments of which that gentleman is the author, and which may be found figured and explained in "Mayhew on the Horse's Mouth." The

present instance of fertile ability is a combination of two well-known tools which have long been in general use; or, taking another view of it, we may say it is a novel application of the common trocar. The old pewter tracheotomy tube forms the canula, and into this the stilette, so far changed as to allow of its being easily withdrawn, is inserted. The reader will, from what we have said, comprehend the principle of the invention; and it, therefore, now becomes our duty to refer to the benefits which its use bestows upon the patient, and the advantages it confers upon the operator.

In the first place, it demands the very least possible amount of surgical skill. Those who are apt in the use of the knife may be inclined to view the circumstance we have named as scarcely an advantage; therefore it may be as well we should state the result of our professional experience on this subject. The old plan of operating was not remarkable for being difficult; but, nevertheless, under it we have seen various holes made, and pieces of cartilage removed, all of which we know were meant to be circular, but not one of which could be regarded as distantly representing such a figure. All kinds of eccentric shapes have been described; and, among them, there were few irregular forms that were not in some manner depicted: but in each and all of them they seemed to have had a decided abhorrence of any thing round. The old tracheotomy tube was, however, round; and as the space cut for its insertion was not round, it follows as a matter of course that, for its insertion, either more or less must have been taken away than ought to have been excised. Some persons may imagine an inch or two of cartilage a point of small importance; but that is a matter we should be ashamed to discuss publicly; and to all who may entertain such an opinion we will content ourselves by stating, that in surgery it looks badly in the eyes of our employers when an act so perfectly gratuitous is performed.

A circle of the dimensions needed for the old operation could not be cut with an ordinary scalpel, the blade of which is so broad that it renders the attempt ridiculous. Moreover, cartilage is not the best substance the surgeon could select for operation, especially as, in the trachea, that structure offers no special temptations, seeing it cannot be rendered fixed, and is always likely to be moved. There is, however, another difficulty which used to attend the old

operation. We have known horses grow troublesome while it was being performed; for though all animals will, as a general rule, stand perfectly quiet to have the trachea opened, we have occasionally met with one that appeared to become excited under the sudden feeling of relief thereby afforded.

Again; we may state that the operation was, in this country, commonly resorted to only in acute cases; and, consequently, to gain the time which would allow an abscess to mature, we, under the old plan, took away that which months might be needed to restore. Cartilage, being the most lowly organized substance in the body, is the one which of all others the surgeon would desire to avoid. It is strange in its modes of healing. Often fibrous tissue is thrown out, and true cartilage is never reproduced. Occasionally, the loss of cartilage is replaced by bone; and not seldom the wound in healing has contracted the tracheal tube, and left the horse a confirmed roarer. We shall here make no allusion to abscesses and tumours, with many other vexatious incidents. Tracheotomy, though not of itself dangerous, and always affording immediate relief, used to be in its after-consequences so remarkably uncertain, that, in our minds, we have debated whether or not the performance of it could, in veterinary practice, be justified.

Connected with the old method of operating, there was another source of annoyance not altogether unattended with danger. Let us suppose the operation to have been most skilfully performed, and the ordinary pewter tuble to have been tied on so very neatly that it looked like an ornament. Nevertheless, in a little while, the lips of the wound begin to swell, and all around the immediate part enlarges; and the tube, which looks so very nice at first, is thrown out of its place, the inclination of the shield usually informing us that the tube is tilted upwards and forwards. As we recognize this fact, our reason assures us that the edge of the tube is being pressed against the posterior portion of the mucous lining membrane, and we fear to calculate the consequences of continued, perhaps violent, pressure upon a part so delicate and so highly organized.

We have named the greater number of the annoyances that attend upon the old plan of operation, and it is to the removal of these that Mr. Gowing has directed his attention. His instrument

fairly meets them all, and, up to the point of our present experience, we think successfully masters them. To make this understood, we will now proceed to describe the different parts of which the tracheotomy tube and trocar is composed.

Figure 1 is the SHIELD, in shape not very unlike that which used to be soldered into the end of the old tube. In Mr. Gowing's instrument it is free, and can either be slid upon the canula or taken off. When separated, it appears the thing depicted in the engraving. It being, however, a simple piece of thin mettle, some additional substance was needed to render it steady when placed in its proper situation. To gain this so far as was required, and at the same time avoid much additional weight round the central orifice, C, is a margin of some breadth, which effectually prevents the shield from shaking about or seeming unsteady, on account of the width of bearing which it presents. The shield fits the canula (Fig. 2), and in the wings are two slots or slits for the introduction of tapes or straps through them. Yet, supposing the shield to be put upon the canula, and to be tied around the neck of the horse, if it could not move to and fro, it nevertheless might slide up and down, for the margin that made it steady did not also render it stationary. To oblige it to retain one place, Mr. Gowing has resorted to a very simple but a very effectual plan. A is a pin and screw, which accurately fits a passage, B, within which a female screw is contained. A few turns of the head of the pin in one direction will therefore always enable the operator to tighten the shield upon the canula, and a few revolutions the contrary way will at any time empower him to shift the shield either backwards or forwards.

Fig. 1.

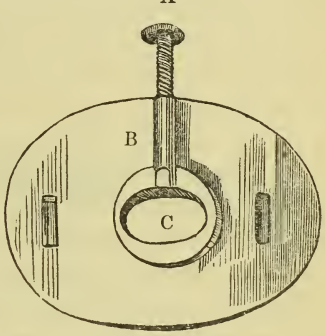


Fig. 2.

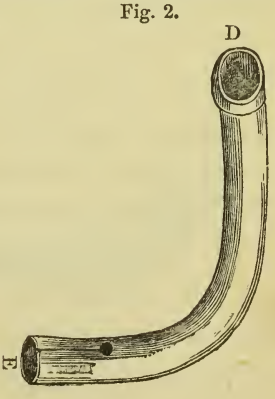


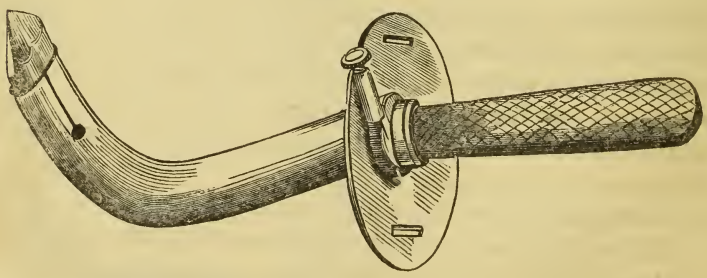
Fig. 2 (p. 95), the canula, has at one extremity, D, a marginal rim to prevent the shield from being displaced or hinder it from sliding off during the periods of adjustment. The other extremity, E, is thinner; and on one side of it is a slot or slit which allows the canula at this part to firmly grasp the stilette, thereby preventing any obstruction during the introduction of the instrument.

Fig. 3.

Fig. 3 represents the stilette when it is withdrawn. It is composed of ten pieces united by six link-joints. The use of these joints obviously is to permit the stilette to be inserted into and withdrawn from the canula; which obviously could not, from the great curve of the tube, be accomplished if the blade were solid. The handle, G, is chequered, for the purpose of giving slippery hands a surer grasp; and it is also inclined upwards about 25°, with the intention of affording the operator greater command over it during the time of its insertion. The end of the stilette, H, is triangular, having its edges sharp, but its point blunt.

Such is a description of the three pieces which enter into the composition of Mr. Gowing's tracheotomy tube and trocar, and which, when put together, present the following appearance:—

Fig. 4.



The veterinary surgeon who has resolved to use it, in the first

place lays bare the trachea. He then takes a common scalpel, and, having selected one of the junctions to the numerous rings of which the trachea is composed, makes a puncture sufficiently large to admit of the entrance of the point of the stilette. This done, he takes the instrument into his right hand, and, having rested the end of the handle against the ball of the thumb, thrusts it through the orifice he has previously made. Should the hole not be sufficiently large, the cutting edges come into play; and if during the thrust the point of the stilette could possibly be driven against the mucous membrane, it is incapable of doing serious injury, it being made blunt. The stilette is then withdrawn, the canula being left in; and when the shield has been adjusted, and the tapes attached to it have been tied, the business for the present is concluded.

Probably, however, swelling may hereafter set in: it is then that we feel the use of the pin and screw. A few turns render it loose, when we can slide forward the shield, and afterwards make it once more secure at any point required; thus preventing the end of the tube from being pressed and retained against the interior of the trocar.

The great advantage which Mr. Gowing's instrument confers is contained in the release which it gives us from the necessity we were formerly under of destroying comparatively large portions of cartilage, without any certainty that these would ever be restored. When Mr. Gowing's instrument is used, nothing is taken away. A simple puncture through a structure far more vascular than cartilage is the only outrage committed, and this can be speedily performed. In accomplished hands small assistance and little light are absolutely required. We could operate in the dark, or by ourselves, or with a sense of convenience, if we only had a man to hold the horse's head. In acute cases, therefore, this trocar is every thing that we could desire. It is quickly used—it can be fitted in an instant to the smallest or the largest animal—it is easily adapted—it takes away no substance, but it makes a small wound, leaving little to heal and nothing to be restored. It is admirable for emergencies, and there is generally a pressure of circumstances when tracheotomy is resorted to.

Mr. Gowing's instrument is certainly the most ingenious and the best thing of the kind that we have seen. In make and

appearance it has a surgical look, of which the old tools were sadly deficient. How far it might rival the French tube, if worn for years, we dare not hazard an opinion; but, while the French tube is retained in its place through pressure made upon the mucous membrane of the trachea, it seems possible, by nice and frequent adjustment of the shield attached to the canula of Mr. Gowing's trochar, to prevent the interior of the respiratory canal from being interfered with.

We think very highly of this invention, while it reflects no inconsiderable credit upon its author. We see but one circumstance likely to oppose its general use: it cannot but be in some degree expensive. The tracheotomy-tube is necessarily left behind when the veterinary surgeon quits the stable; and grooms have peculiar powers of mischief, with a most haughty disregard for all property that is not their own. Mr. Gowing's instrument is too good to be wantonly damaged or intentionally lost; and this is the only complaint we have to urge against it. A higher compliment, probably, we could not pay to any individual than we offer to Mr. Gowing, when we tell him that we complain only of the excellence of his production. It is equally useful and artistic; nor can we be believe that that which is so admirably suited to the ends proposed will be speedily superseded.

HYDROPHOBIA CURABLE BY USING SUBMERSION. pp. 39. Dublin: Hodges and Smith. 1849.

THE essay before us, we are informed by its author, who is not a member of the medical profession, is "to point out the application of a remedy, which, *made use of in the proper way*, strange to say, is almost invariably attended with beneficial results. This," continues the author, "seems to be a hazardous assertion to make in this age of inquiry and scientific research; but, incredible as it may appear, I hope to be able to prove to the medical public that they have for centuries been in the possession of a remedy for those generally fatal diseases (tetanus and hydrophobia) which might have enabled them to combat them successfully." The treatment consists in making use of submersion in cold water *ad deliquium;* i. e.

to the extent of *half drowning the patient.* Unless this effect be produced, the happy result cannot be insured. It was the perusal of some cases published by Dr. Currie (of Liverpool), to shew the efficacy of cold immersion in idiopathic tetanus, that first led the writer to offer a "conjecture" that the same kind of treatment might prove effectual in what appeared to him an analogous disease, viz. hydrophobia: a suggestion which, when he came to make inquiries, he found had already been put to practical test by Dr. Hillary. But Dr. Hillary, it turned out, had been himself forestalled; the employment of the remedy being discovered to be no less ancient than the time of Celsus. This certainly establishes the *oldness* of the remedy in question: but we do not think the author has been equally happy in demonstrating, on the authority of others, its alleged efficacy as a curative remedy. If submersion had proved so infallible, how comes it that the antidote ever became lost sight of so long as the viruses continued their merciless ravages? We remember the days, and so will some of our readers, when cold affusion—not submersion—was represented most highly in veterinary practice as a remedy against tetanus. Coleman lauded it to the skies. A little while, however, and no more was heard about it. No veterinarian of the present day, we will take upon ourselves to affirm, dreams of employing affusion. Should, however, any member of our profession harbour in his mind a desire to make a trial of *submersion,* let him first read the pamphlet we have given him an insight into, and then do his best to submerge his quadruped patient; though, if it be a horse or a cow, we have a notion he will find the administration of the remedy no such very easy task. Still, in certain situations, a trial of the kind might be made, and, in such emergency and danger as a case of hydrophobia presents, most assuredly, did circumstances permit, ought to be made.

Foreign Extracts.

Memoir on the Castration of the Horse.

By M. Goux, *Department Veterinary Surgeon at Agen.*

[Continued from p. 49.]

The divers methods of castration which have been practised may be ranged in two classes :—

The First Class, *by removal of the testicles*, will comprise the operation,

1. By the clams, covered or uncovered;
2. By ligature, covered or uncovered;
3. By torsion and tearing out;
4. By scraping and grating;
5. By cauterization or section of the cord by means of a cutting firing-iron;
6. By simple ablation;
7. By incision of the flank in the case of cryptorchis.

The Second Class, *castration without incision*, through mortification of the testicles within the scrotum, comprises four methods :—

1. By crushing;
2. By simple ligature surrounding, externally, the scrotum, the two cords, and their envelopments;
3. By double ligature, internally, carried by means of a needle athwart the cord, beneath the scrotum and dartos;
4. By twisting of the spermatic cord.

Among all these methods, to point out the preferential one is a difficult matter. To do this, one ought to have put all to trial; and this is what we cannot do in private practice, since we feel ourselves implicitly bound to operate in the best and safest way we can for our client. And if we consult books or the opinions of other veterinarians on the subject, we are not likely to arrive at any definite or satisfactory conclusions; since one prefers one method, another another, and either will give what to him appears good reasons, and will call up his experience to substantiate them.

The majority of veterinary practitioners (in France) employ, to the exclusion of every other method, the naked or uncovered operation with the clams (*à testicles decouverts*).

The object we have in view is to insure such compression of the cord as will intercept the circulation, and so cause mortification of the genital glands. And the best means of effecting this will

be those that prove the most simple, the most easy, and the most ready, with the least risk of insuccess or danger.

We recommend castration at the youngest possible age, in most cases during the sucking of the mother, and in no case later than a year or fifteen months old. And at this very early period of age we have good reasons for believing that the *ligature* is the preferable operation. With aged horses, in whom there is great thickness of cord, it is objectionable; and this is the reason why it has been discarded from practice on young ones. It is simple and more readily applied than clams; it is easier and much more certain than torsion, tearing, scraping, ablation, or cauterization. It is less painful than crushing; more efficacious than ligature externally; more simple and easy than internal ligature. Lastly, it has over twisting of the cord, at that age impracticable, every possible advantage.

To cast and secure the foal, cut at one incision through all the coverings of the testicle; with a waxed thread to make a ligature above the epididymis; leaving the testicle hanging below it, to prevent the ligature slipping off. This is all that is commonly done. The only required precautions being,

1. To make the incision large, to prevent an accident that may ensue from too rapid cicatrization.

2. To draw the ligature quite tight. We employ the bleeding knot (*nœud de la saignée*), or twisted suture, secured by other knots around the cord.

Many practitioners, however—among whom we may reckon ourselves—prefer proceeding in a similar manner with covered testicles (*à testicules couverts*)*. Instead of completely denuding the testicle, they carefully cut through the skin, the dartos, and the cellular covering underneath this last, leaving unmutilated the tunica vaginalis, around which (instead of around the bare cord) is placed the ligature, a simple knot being sufficient for its retention, taking care to make that as high as possible; which may be rendered the more secure by arming one end of the thread with a needle, and passing this through the cord, immediately below the knot, around which it may be tied once or twice more, if required. This will prevent its slipping. The testicle is now removed, and the parts examined to ascertain if there be any hæmorrhage. If so, another knot may be made, drawn still tighter†.

* At a very early age the testicles are not in all subjects sufficiently developed to admit of their being grasped while the animal is lying upon his back without a great deal of trouble. To remedy this, before casting pass a slip-knot around the testicles upon the outside of the scrotum, which will serve afterwards to draw them out.

† Some castrators separate the testicle from the epididymis, and place the ligature around the cord, at the point of junction between the two.

Foals feel this operation so little, that there is no occasion to take them from their mother. They may suck and gambol about as usual.

Colts a year or more old should be housed and taken care of, and exercised. Exercise, indeed, is indispensable.

It rarely happens that this simple operation, viz. ligature upon the unopened tunica vaginalis (*ligature à testicles couverts*), is followed by any ill consequences. Indeed, there are but two that we need notice; these are, *engorgement of the sheath*, and *abscess*.

ENGORGEMENT OF THE SHEATH.—Inflammation, the inevitable sequel of castration, the pressure of the ligature, the compression of the vaginal sheath, the irritability of the young subject, all become causes of tumefaction, sometimes considerable, of the sheath and scrotum, on the second or third day. Diet, exercise, blood-letting in plethoric subjects of a certain age, are the proper means of preventing such engorgement, and of counteracting its spread upon peritoneal or intestinal tissue; while the tumefaction itself is met by simple lotions to the part, aided by scarifications and exercise.

ABSCESS.—Some days subsequent to the operation, sometimes one observes stiffness to a considerable extent has crept over one of the thighs. Examination of the part shews that abscess has formed upon that side of the sheath. This may owe its production either to the incision being full small, and that, in consequence, the external wound has become closed before the ligature has been eliminated; or to the circumstance of the ligature not having been drawn sufficiently tight, and so the cord remaining incompletely mortified. Prevention, therefore, consists in taking care to completely fulfil these two conditions. The remedy is free incision into the abscess: this will allow the ligature and mortified parts to be thrown off and discharged with the pus. Leaving the ends of the ligature long enough to hang out of the wounds might mostly prevent abscess occurring; though even then, occasionally, from the lips of the external wound closing around the ligature, abscess forms, a case best relieved by simple traction of its ends.

Taking into consideration all methods of castration, as regards the number of accidents consequent on them, the odds are in favour of the ligature.

TO CASTRATION BY CLAMS, the greatest objection is, the necessity of maintaining them for eight-and-forty hours upon the cord, the compression and dropping of which becomes more or less a source of irritation. Dropping of the cord operating against

This method necessitates the denuding of the testicle of its vaginal covering; it affords the advantage, however, of more complete pressure. But this, at the age we are operating, is but of minor importance.

exact compression, pinching the epididymis or the skin, inflammation set up in the wound, adhesions the consequence of this, all become so many causes of untoward results from castration with the clams, whether performed with covered or uncovered testicles, such as œdema, peritonitis, *champignion* (fungous enlargement of the cord), scirrhus of the cord, fistulæ, tetanus.

CAUTERIZATION has recently been withdrawn, from the oblivion into which it had sunk on account of the accidents that had befallen it; such as inflammation of the cord, gangrene, and hæmorrhage, though in some hands such results have been avoided.

BISTOURNAGE.—*Twisting of the cord* is frequently enough practised in the south of France on colts from two to four years of age. The operation cannot be performed earlier than this, from the testicles not having sufficiently descended to give grasp enough for the hand. The first consideration is enough for us to reject such an operation. And the only reason why we are induced to say any thing further about it here, is, to communicate to our brethren what we have learnt respecting an operation but little known and less practised by veterinary surgeons.

Bistournage, practised upon horses, belongs to the province of gelders by profession, though their practice in this respect is daily falling off in proportion as early castration is gaining ground. And this is not a little aided by the efforts we ourselves are making to bring about this preferable practice.

We have seen gelders operate in this way. They say nothing, explain nothing, about what they do. They do not know themselves, indeed. "The testicles must be seized at the passage." This is all we have comprehended and seen. A vast difference in this respect exists between operating on bulls and horses.

The colt being cast upon his back, the first object of the very violent and painful manipulations they execute is to break through, not the adhesions between the testicle and its envelopes, but the connexion subsisting between the gland and the epididymis. This is effected by the thumb. But should that fail in force, they make use of a stick. They do not often succeed but under considerable time, nor without extensively excoriating the scrotum. The separation effected, the cord becomes elongated, and the gland quite loose: its position being now changed, from being placed horizontally within the scrotum to suspension, lengthwise, within it, as the testicle naturally is in the bull. Now it is that torsion is commenced without any previous up-and-down motion of the testicle, as in the case of the bull. The torsion affects not the entire length of the cord, but simply the tissue joining the testicle and epididymis. In this manner several twists are made, the testicle being held between the thumb and fingers with much address and dex-

terity; afterwards the organ is turned right again and made to ascend. The other testicle is treated in the same manner, and a ligature is placed around the scrotum to retain them both in their places. All which sometimes becomes very difficult, very painful, and very tedious to accomplish.

The difficulty of the manual operation is, *in limine*, an insurmountable obstacle to teaching the practice of *bistournage* in the veterinary schools; and, besides, it is a procedure fruitful in accidents. The operator runs great risk at first of losing his patient. *Bistournage* is exceedingly painful. Almost immediately after the operation the horse is tormented by insufferable cholic. Sometimes he squats upon his quarters. For a day or two he is a prey to vehement suffering. His convulsive throes may produce untwisting of the cord and the fall of the ligature before swelling has come on, and so render the operation ineffective.

Violent manipulation of the scrotum, cellular tissue, testicle, and cord, causes great and painful swelling; the œdema extending under the belly even to the breast.

The other consecutive accidents are, *paraphymosis*, *tetanus*, *sarcocele*, *hydrocele*, sloughing of the scrotum occasioned by the ligature being drawn too tight, sloughing even of the testicle itself, as the consequence of a tardy suppurative action, induced by the destruction of the testicle, or by the complete or partial laceration of the cord.

Sometimes the atrophy of one or both testicles proves incomplete, leaving the animal afterwards the same in appearance as though he had been still a stone-horse. This result takes with breeders, and leads them to prefer bistournage to any other operation.

For two months after bistournage, locomotion remains incommoded; indeed, sometimes the paces are affected by it for a whole year.

In the bull, bistournage is not attended with such adverse effects. He is a less irritable subject; his testicles are naturally ovoid, and the cord is long; which renders the operation easier and more promptly performable. Five minutes will suffice to bistournage a bull; twenty will be required for the operation on the horse. Just so much as bistournage is suited for the bull, just so much is it unsuited for the horse.

To sum up generally :—

1. As a principle, colts ought to be cut while at their dams' side. This constitutes the rule.

2. The presence of hernia, or the absence of the testicles, should postpone the operation. This constitutes the exception.

3. The adoption of castration at the earliest practicable period

after birth is favourable in all points of view; deprivation of the testicles abstracting nothing from the development of the animal.

4. Indeed, the conformation becomes improved by it, especially of such horses as are desired to serve double purposes, or that are intended for the army. Their fore quarters are rendered lighter by it, their muscular energy in no manner diminished, their character made milder.

5. Their rearing, their breaking, their training, rendered easier; neither exists there any apprehension of premature fecundation, bastardizing produce and breed; nor fear of accidents such as happen to or from entire colts.

6. The preferable method of procedure at the age at which we recommend castration is by *ligature*. The youthhood of the animal, the little development of the cords, the rudimentary condition of the organs themselves, the simplicity of the means, all conduce to favour its adoption.

7. In the employment of ligature, prudence dictates procedure by the covered operation (*à testicles couverts*), and the precaution of passing the ligature through the cord. By this twofold precaution hernia is avoided, and hæmorrhage prevented.

8. The accidents by which it is possible for such an operation to be followed are rare, in consequence, we repeat, of the age of the subject, of the proceeding adopted, and of the guarantee it presents. For the most part, such accidents are easily remediable when they *do* occur. Considering their paucity and their trivial nature, there is no comparison between the method we propose and the methods practised by castrators in general.

Répertoire de Médécine Vétérinaire, Bruxelles, April 1849.

*** We recommend the suggestions contained in the above corollary to the consideration of our veterinary surgeons practising in breeding parts of the country.—Ed. Vet.

Home Extracts.

On the Management of Farm Horses.

By W. C. Spooner.

(Continued from p. 44.)

2.—*Breeding and Rearing.*

There is no branch of a farmer's business to which so little attention is generally paid as that of breeding. It is often regarded as a matter of chance whether the produce will turn out

valuable or worthless; whilst, on the other hand, there is nothing so true as that unhealthy parents will not produce healthy offspring. It is very possible that, where one parent is sound and the other diseased, the progeny may turn after the former; but then it is just as likely to turn after the latter, and therefore it is very unwise to risk the expenses of breeding on such an uncertainty.

There are few subjects connected with breeding more interesting than the relative influence of the male and female parent, and few on which such different opinions prevail. Whilst some ascribe the principal influence to the male, others consider that it is chiefly due to the female, and there are not wanting illustrations that appear to support either theory. The freaks of nature (as they appear to us) are certainly very curious, and people are often more struck by a remarkable exception than even by the rule, and are disposed to found their theories accordingly. The Arabs of the Desert, so celebrated for their scrupulous attention to the purity of their breed of horses, are comparatively indifferent as to the stallion, but prize and preserve their mares with the most rigorous care. They will part with the former for an equivalent remuneration, but scarcely any thing will induce them to dispose of their mares if they belong to the true breed. From this well-known fact it has been naturally inferred that they consider the influence of the female as pre-eminent, and the supporters of this theory adduce the fact just mentioned as a strong argument in its favour. Indeed, at first sight it would appear, when we consider the more intimate connexion of the female with the offspring, kept up during the long space which elapses between conception and birth, that the influence of the dam must be greater than the sire.

Facts, however, appear rather to support an opposite doctrine. The offspring of the male ass and the female horse resembles the former far more than the latter: the long ears, spare muscular development, narrow feet and sluggish action, are almost equal peculiarities of the mule and the ass, and strongly attest the plebeian origin of the former. The size, too, approximates to the ass, for the large Spanish mules we sometimes meet with are begotten by asses of great size.

It is surprising, too, what large colts small mares will breed when begotten by horses of great size. Pony mares will thus rear stout cobs and galloways; and well-bred mares about fifteen hands high will throw good sized carriage-horses if put to a powerful stallion.

We may, therefore, from these and other similar facts which could readily be adduced, be justified in concluding that so far as regards the size, general appearance, external form, and muscular development, the influence of the male is superior to that of the

female. But although, in obedience to this principle, I believe that it is principally by means of the male that various improved breeds will be rendered more perfect, yet I by no means wish it to be inferred that I consider the qualities of the female a matter of indifference. So far from this being the case, I would censure in the strongest terms that utter neglect of the qualifications of the female which is so frequently displayed, particularly with horses, regarding it as the most grievous error appertaining to breeding. It is of equal importance to study the qualification of the female as of the male, though their respective excellencies may not be the same. Hereditary disease and weakness of constitution are much more likely to be communicated to the offspring by the mother than by the father, which is in keeping with the fact of the long and intimate connexion kept up between the dam and the offspring, both before and after birth, till weaning takes place. As the same blood nourishes both, both are likely to become affected by any unhealthy change in this fluid. Soundness of constitution is, therefore, an indispensable requisite in the female.

I offer these remarks as general rules, but by no means as rules without exceptions; and I do not wish it to be inferred that the female has no influence in those qualifications in which the male is pre-eminent, for it sometimes happens that the female has greater influence in these respects than the male, and in all cases some degree is possessed. Thus, when a handsome well-bred mare is covered by a large coarse stallion, the defects of the latter are generally considerably softened down—the head is finer, and the frame of the offspring, though larger than that of the dam, is handsomer than that of the sire. The result of this cross is generally superior to an opposite assortment, where the sire is thorough-bred and the dam a coarse heavy animal. The progeny in this case is often unequal and ill arranged, possessing perhaps the fine legs of the sire and the coarse body of the dam. We may, therefore, with much propriety endeavour to modify the defects of one parent by opposite qualities in the other; and though we may not always, we shall often, succeed to a certain extent in the accomplishment of our wishes. We shall succeed, however, the more perfectly by attending to those qualities in which the respective influence of the male and the female is most likely to be exercised: that is, the size and external conformation we should seek to govern by means of the male, and the constitution and nervous system through that of the female. The fact, however, of the male animal begetting from fifty to a hundred offspring in the course of a year, whilst the female does not produce more than one or two, must and always will cause improvements to be effected in breeds of animals principally by means of the male.

The breeding of farm-horses resolves itself into two branches,—the principles of breeding and the practice. Unless the former are correct, the latter will be continually at fault, and it will be a matter of chance and uncertainty whether success or failure is the consequence. "Like begets like" is an axiom that cannot be disputed, and it is vain to expect valuable progeny unless the parents possess the qualifications which we seek to obtain in the offspring. The principal object in breeding cart-horses, as in other animals, is gain. The breeder is desirous of breeding animals that will yield him the largest pecuniary return; consequently the most profitable animal to rear is that which is likely to suit the London market, and so realize the high prices which the wealthy brewers are willing (or rather are obliged) to give.

It is necessary, however, in addition to the possession of suitable mares and horses, that the pasturage should be also abundant and nutritious, otherwise the progeny will become monsters in ugliness rather than in size. Where, however, the land is suitable, as in Leicestershire and other midland counties, the breeding of these massive animals is more profitable than that of other agricultural horses.

The practice adopted is to select the best mares on the farm for the purpose of breeding; sometimes nearly the whole horse stock on the farm consists of breeding mares and two and three-year-old colts and fillies. Of course, in such instances it is necessary to keep rather a large working stock for the size of the farm, in order that the mares may be spared for two months in the spring without inconvenience. The breeder may or may not possess a stallion himself; if not, there will be little difficulty in finding a suitable one, as, in consequence of the male serving so many females, it is of course more difficult to find a number of suitable mares than it is to find a single horse with the proper qualifications. Where the purpose is so specific as in the style of horse I am now speaking of, it is needless to describe the sort of animal we should choose for a stallion. The breeder will not select the horse unless he is large and powerful, and yet compact, standing perhaps nearly seventeen hands high, and yet comparatively short in the legs, so as to deceive a bystander with regard to his height: there is no point more desirable than that the horse should appear smaller than he really is; it is at once a sure proof that the animal is symmetrically formed. However, we may take it for granted that the stallion is a fine handsome animal. Any observations will be more useful which point out those defects that may co-exist with this fine appearance. First, then, we may notice that to which this breed is so very much predisposed,—the possession of large ring-bones and side-bones on the pasterns. Perhaps it may scarcely be

possible to find a suitable horse entirely free from this defect; but we should at any rate select one that is most free, and reject altogether a horse that is lame from such causes.

The hock is a most important joint, being severely called upon in heavy draught, and consequently liable to strains. The existence of any disease of this joint, whether curbs, spavins, or thoroughpins, should therefore be sufficient to condemn the horse. The hocks should be broad in front, and neither too straight nor too crooked, nor yet cat-hammed. When we consider that a heavy dray-horse, working in the shafts, has perhaps a load of four or five tons behind him, which, in going round a corner, devolves on him alone, and in the action of walking must thus be thrown alternately on each hock, the importance of having this joint free from disease and from all tendency to disease must be very apparent.

Next in importance are the eyes, which in the old horse should be free from every semblance of defect (unless through accident), and in the young horse should also be free not only from actual disease, but from all appearance of tendency to it. The eyes should be full without being too convex; for the small sunken eye is certainly much more liable to disease than the large clear eye. The fore-legs of the horse should be strong, and flat below the knee, and by no means round and gummy, either before or behind; for cart-horses having always a stronger predisposition to swellings and humours than other horses, it is most essential to guard against this evil by selecting the stallion as free as possible from such predisposition; and, for the same reason, the less white hair there is about the legs the better, and indeed there should not be too much hair of any colour. The fore-arm should be strong and muscular, and should not stand too much under the body; for although this is not of the same importance as with other horses, yet it is extremely desirable. So likewise with regard to the shoulders: they should be tolerably oblique, for when the shoulders are good, the horse is likely to be a good walker. The elbows should not be too close to the chest, but there should be plenty of room to put the hand between them. This pinning of the elbow to the ribs was a principal fault in one of the finest horses exhibited at Northampton, and it caused the animal to have very bad action. With regard to the neck, it had better be rather too thick than too thin, of average length, and, if moderately arched, so much the better. It is a great fault in all horses—but particularly in cart-horses—to have an ewe neck. The angles formed by the junction of the neck with the body, and by the head with the neck, should not be too acute, for such horses are very liable to poll evil, from the disposition induced of throwing up their heads suddenly,

and thus striking their poll violently against some object above them, such as a low doorway. Suffolk horses have a slight tendency to this fault. With regard to the other points, the back should be straight and broad, the ribs well arched, and the false ribs of due length, so as to give the abdomen capacity and roundness. The tail should be well set out, not too drooping, and the quarters should be full and muscular. The horse should girth well, and, if a large horse, should be eight feet in circumference.

The foot is a matter of very much importance: the tendency of many heavy horses is to have thin flat feet, but a stallion so constructed is exceedingly objectionable. An abundance of horn, so as to afford a firm holding for the large nails and heavy shoes which such animals are obliged to wear, is extremely desirable, and the feet had better be too large than too small.

With regard to the mare, she should possess as many of the points I have enumerated as possible.

Having thus ascertained that the stallion is free from the cardinal faults which I have pointed out, and rich in the virtues I have enumerated, we should also be satisfied, before securing his services, that he is well suited as regards size, strength, breeding, and activity, for the mare we wish to put him to. If the mare is small but symmetrical (for we cannot suppose any sensible breeder will breed from a little ugly mare), we may very properly select a large-sized stallion, taking care, however, that he is an active mover; such a horse, indeed, as gained the first prize at Northampton. If, on the other hand, the mare is large, and has a tendency to coarseness, we should select a middle-size horse of symmetrical appearance,—a Suffolk-Punch for example; and such a one as either of the prize animals at Northampton belonging to this breed.

Where the object is specific, viz., to lighten and render more active a coarse and slow breed of horses, we may then have recourse to the Cleveland with great advantage; taking care, however, that the subject of choice, in addition to symmetry and activity, should be as deep in the ribs and short in the back and the legs as the Cleveland bay can possibly be. Beyond the Cleveland, however, we must not go: I deprecate in the strongest terms that utter departure from the principles of nature which is sometimes displayed in the production of a nondescript animal,—the cross between the thorough-bred horse and the cart-mare—an animal often possessing the body of one parent and the legs of the other—the vices of both, with the virtues of neither.

One precaution in breeding I would strongly recommend, which is, never knowingly to breed from animals of vicious dispositions. It is unfortunate enough for society that the vicious amongst

mankind are enabled to perpetuate themselves: it were folly, indeed, in the highest degree, to permit the vices of quadrupeds to be added systematically to the catalogue of crimes. Biters, kickers, gibbers, and horses difficult to shoe, should be therefore carefully eschewed; and so likewise should the possessors of the minor vices and other hereditary faults, such as crib-biters, roarers, hot workers, &c.

Although the breeding of cart-horses more frequently forms a part of the farmer's business than that of any other description of horse, it has not yet received that attention that its importance merits, or that, in my opinion, the necessities of agriculture will for the future obtain for it. Too frequently have the infirmities of the mare caused her to be selected for breeding, and too often has the size of the stallion been his only recommendation. It would be well if, instead of this, the following rule were observed, viz. *never to breed from an old infirm animal,* but to select for the purpose *the youngest and best mares on the farm.* There is not even the excuse amongst farm-horses which exists amongst others for breeding from inferior mares, as the cart-brood mare will not require more than two months' rest, and that during a leisurable period of the year, thus being otherwise adequate to most of the ordinary requirements of the farm.

The object, however, to be kept in view ought to be to endeavour to breed the most valuable description of animal, and one that will afford the highest pecuniary return. Due regard must, of course, be paid to the nature and quality of the land; for instance, it is vain to attempt, on ordinary or inferior land, to rear those leviathans which command such high prices from the London brewers.

There is, however, a smaller description of horse that can be bred to advantage, being more suitable for agricultural purposes, and yet large enough to command a good price in the London market. Such an animal, averaging about sixteen hands, short in the back, and round in the barrel, with well-proportioned limbs, is sure to command a good price, and to pay well for breeding. Such horses, however, can only be bred by devoting the best mares to the purpose, and keeping the colt well through the two first winters, so that his growth shall not be stunted and his symmetry destroyed. The breeding of farm horses can be entered into with far less inconvenience than that of any other description, inasmuch as there is far less necessity for taking the mare from her usual work for some time previous to foaling. A half-bred mare is incapable of pursuing very fast work for many months before foaling, whilst a cart-mare can continue her usual labour till within a very few weeks of this period. This being the case, there can

be no valid reason why the best and healthiest mares on a farm should not be used for breeding. It is merely necessary to keep them in good fair condition, and not to put them to severe strains, and then the loss of work will not be more than a few weeks previous to foaling, and about double or treble this period afterwards. The farmer may depend upon it, that if he has suitable pastures for rearing the colts, and selects the best and finest mares he can obtain, and puts them to the most desirable stallion, the breeding of no description of animal will pay him better than cart-colts. They can be reared with less risk, and will produce a quicker return than any other kind of horse; while they do not involve the expense and risk in breaking, by which so many valuable half-bred horses are ruined, through the ignorance, recklessness, or bad temper of the breaker. One fact, however, should be borne in mind, which is, that, if a full return is anticipated, the young animal should be kept tolerably well through the winter months: for if, as is too frequently the case, it be *half starved*, the loss from deficiency of *symmetry*, *size*, and *strength*, will be much more than can be compensated by any *saving* of food.

In rearing young colts much care should be taken; they should be handled very early and get used to the halter; by which means, in case of any accident, not half the risk will be incurred in the treatment as when the colt is allowed to remain wild and ungovernable. At Michaelmas the colt is usually weaned, soon after which he should be allowed to taste a few oats, which will promote his health, strength, and condition, and conduce very much to his symmetry. A peck of oats a-week may be enough at first, and through the greater part of the first winter, increasing it gradually to a peck and a half. During the second winter, two to three pecks per week may be given; and at two and a half years old the colt may be broken to harness, doing perhaps half a horse's work, and then his corn is to be increased accordingly. Carrots form an excellent addition to the food of colts, particularly through the first winter.

THE VETERINARIAN, FEBRUARY 1, 1850.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

PURSUING the subject of "discrepancy of opinion" between veterinary evidence in courts of justice, of which we the month before last endeavoured to trace the causes so far as they lay with the

personnel concerned, let us now inquire what, in horse transactions in general, are the topics of dispute which lead so often to appeals to the law. A search into the volumes of THE VETERINARIAN—in which for these twenty-two years back horse-causes have been on the most important occasions recorded—we find, out of fifty-two cases of action at law chronicled, twenty have been on account of lameness, six for thoracic disease, three for glanders and farcy, three for stringhalt, three for disputed points in racing, two for hernia, two for diseased teeth; and of the several topics of unskilful bleeding, viciousness, death from hunting, "chords" or chronic tetanus, rupture of the diaphragm, rupture of tendon, temporary disease, careless administration of medicine, injuries sustained in a veterinary surgeon's infirmary, identity of horse, roaring, hire of horse, and castration, one for each. Thus it appears that lameness becomes the matter of dispute in little less than half the cases brought into court, and that next in frequency to lameness comes thoracic disease. Let us first make a few observations on the subject of lameness, regarding it as a point of legal controversy.

In the question of lameness, it is by no means an uncommon occurrence in a court of law for one veterinary witness to give evidence as to its existence at the time he examined the horse, while another, who did not probably see the horse but at some subsequent or antecedent period, stands to attest the animal's soundness. Though the presence of lameness may appear to unprofessional persons so plain a matter of fact as to be incapable of giving rise to doubt or dispute, we, as practical men, are too well aware of the contrary to listen to such unqualified assertion. Surely, say the judge and jury, "a horse must be palpably lame or sound." This may seem like *sound* doctrine to their ears, but it is not so to ours. We well know that, every now and then, a horse comes before us for examination that appears in our eyes to run one way lame, the opposite way sound; or that will run sound in a straight line, but lame around a circle; or that walks sound and trots lame; or that will not have his lameness elicited under any thing short of a "rattling gallop." "How," we ask, "are such cases as these to be dealt with, gentlemen of the jury?" Are veterinary surgeons to be called fools and liars because occurrences like these are liable to happen without their having any control over them? We put

forward these facts for consideration under the supposition that two veterinary surgeons shall inspect the same horse on the same day, nay, even the same hour, and that one shall pronounce him "sound," while the other gives a certificate that he is "lame."

But supposing a week or a month—nay, even a single day—shall elapse between two or more examinations of the same horse, is it not possible that the animal who is lame one day, may, from repose or other cause, run sound the next? Do we ourselves feel our limbs the same after a hard walk as after a day of rest? A person may halt from a corn one day, and not feel it the next. We have known many cases of horses (rheumatic) in which lameness, to an excessive degree, has been present for a day, a week, or a month, in one limb, and the next day or week or month has shifted to the opposite leg. We have ridden horses that have fallen, all on a sudden, so lame in one or other of their limbs, that at the time, in our mind, nothing short of supposed fracture or dislocation—had we from experience not known better—could have accounted for the severe and sudden limping.

It may be said, perhaps, in reply to these observations, that these, though possibilities, are not very like probabilities. This, however, we, after long experience in such matters, hesitate not to deny. Nay, we feel we can go further than we have yet gone; and aver, with much reason, that two veterinary surgeons of indubitable judgment and honesty of opinion shall differ, while present together at the same examination, concerning the soundness or lameness of the same individual horse. This may arise either from one of the examiners not catching the critical moment—in the turn, most likely—when the animal evinces lameness, or from the action of the horse being of that character which one hesitates to pronounce to be perfect or normal soundness, and yet which one feels equally unwilling or unwarranted in calling lameness. These are all matters concerning which judge and jury can know little. Therefore it is we feel the more desirous, in our own defence, to give them certain information, in order that we, as veterinary surgeons, may not run the risk, every time we enter the witness-box, of being, on account of our "discrepancy of opinion," run down as ignoramuses or something worse, by counsel who bring up farriers against us to buoy up their own one-sided arguments.

Our readers will find an account of a horse-cause in the twelfth volume of THE VETERINARIAN—Turner, clergyman, *v.* Dansey, gentleman—which seems calculated to throw some light on what we have been saying. It appears that Turner, counselled by his brother, purchased of Dansey a horse which had been fired about two years previously; not "warranted," but stated, "on the word of a gentleman," to be "believed" to be, sound; which statement was confirmed by the opinion of a veterinary surgeon who was present at the time of sale. The horse was ridden away by the buyer immediately the bargain (for £45) was concluded, who found that, on his way home, the horse tripped very much, "so much, indeed, that the plaintiff dismounted, to see whether he had picked up a stone." Moreover, it was remarked at the time of purchase that the horse "pointed his off fore foot;" and the same observation was made "when the horse had got home, and was put into the stable." Another veterinary surgeon, one employed by the plaintiff, saw the horse "early in April" (the purchase having been made "about the 31st March"), and pronounced him "then lame." For the defence it was repeated, by the other veterinary surgeon who had fired him, that the horse was sound when sold, although he admitted he had been "lame before," for which he had fired him at the defendant's request; and that "after the firing he went perfectly sound."

Now, here is a horse who had been lame, but was made sound by being fired, and who pointed his foot, yet shewed, we think it may be presumed, no symptoms of lameness at the time of sale. No person, pretending to any knowledge of horses, would make purchase of one that had been fired without suspicion of future failing, whatever his present or actual state might be; and, if he knew that the horse had been fired for lameness, he had no right to suppose the same, on work, might not return. And, what rendered this, in the case before us, the more probable was, *the pointing of the foot.* Still, as far as we dare venture on an opinion from the facts of the case as stated on the trial, we believe the horse to have been, or gone, *sound* at the time of purchase, while we admit that he was palpably *lame* shortly after. The animal was evidently "screwy"—his mended limb was evidently ready to give way again on but little provocation, and that "little" he ap-

pears to have received in full measure in the hands of the clergyman and his brother. The "screw" might have been loosened at the time the plaintiff and his brother rode the animal on trial, *before* purchase; or it might have been loosened on his way home, or at some subsequent trial of the new horse, between the 31st March and "early in April," the date of his being pronounced "lame." Be this how it may, the horse not being detected or proved to have been unsound at the time of purchase, the verdict pronounced—"that the horse was *unsound at the time of sale*"—was, in our judgment, "in error." The defendant ought in equity to have recovered upon this as well as the other count, *warranty;* notwithstanding it might have been hinted that he "let his friend in for a bargain."

[To be continued.]

Mr. Reeve's novel and ingenious experiments have furnished us with fresh and confirmatory evidence of that cardinal point in the economy of the Foot of the Horse, upon which were turned the beautiful theories of Lafosse, Coleman, Clark, and others, in explanation of the functions performed by its several component parts; concerning which all authors of systems of plantar physiology and shoeing are agreed; and according to which our practice of shoeing up to the present day has been regulated;—we mean, *the expansive property of the foot.* It will be recollected that some experiments made by Mr. Gloag, recorded in the Nos. of The Veterinarian for May, June, and July last, seemed to induce a different conclusion. Against such inferences, however, it will be remembered we at the time protested*, still leaning to the old doctrine of "expansion;" and adducing, as our chief reason for doing so, an accidental result which fell in our way while engaged, some years ago, in making experiments with the horse-sandal. If a sandal-shoe, instead of being constructed with a frog-bar, be made of the shape of the ordinary shoe, about the substance of a racing plate, and be strapped upon the foot in the mode recommended, as soon as the horse is put into a brisk or forcible trot, the shoe will be cast off the foot, and, if now examined, will be found to have undergone sensible dilatation at the heels and quarters; a circum-

* See "Leading Article" in The Veterinarian for July 1849, at page 418.

stance accounting for the shoe having been thrown off. Should the shoe have been measured prior to its being put on, remeasurement of it as soon as cast will give some estimate of the amount of expansion the hoof has undergone during action, which will be found greater than might be anticipated.

Coupled with the fact of expansion in the unfettered because un-nailed hoof, Mr. Reeve's experiments are valuable, not only from the circumstance of their demonstrating that expansion likewise takes place in the foot shod in the ordinary way, and that with the expansion the sole descends; but also because they inform us of the *ratio* of expansion and descent at the different parts of the wall and sole of the hoof. Coleman's happy illustration of the descent of the sole of the hoof consisted in placing the shoe as close as possible upon it without actually touching it, and proving that such would lame a horse in consequence of the sole descending and striking against it. Mr. Reeve, by ingeniously contriving to oppose a sort of inverted "harrow," full of small spikes, to the surface of the sole, demonstrates the same movement, with the farther useful practical facts, that the descent of the sole is greatest around the sides and point of the frog, least across the toe and at the heels. And by the application, sideways, of a similar spiked iron plate to the outer wall of the hoof, he has contrived to establish the fact of expansion, and the degree to which such takes place in different situations: expansion being shewn to be greatest at the quarters and heels, least at parts anterior and superior to them.

Repeating here what we said in THE VETERINARIAN in July 1849, in reference to the declination of the heels of the foot—for inviting our attention specially to which we are indebted to Mr. Gloag—we find that the shoe remains "a fixed point" in such movement; consequently, "the moving body must be the hoof," the fibres of which, Mr. Reeve pertinently observes, must, therefore, under such circumstances, actually "bend." The curious fact to which Mr. Gloag called our attention, of one hoof being found to decline to a less degree at the heels whenever the heels of the opposite hoof were made fixtures by wedges, being probably explicable on the supposition that, under such circumstances, the action of the limbs and bearing of the feet become altered: the unwedged foot, through sympathy, partaking of this in common with the wedged one.

Mr. Gamgee, at his early years, with his short experience in professional matters, has taken rather a bold step to remonstrate with heads so much older, and it might be presumed so much wiser, than his own, on topics of so grave a character as the education and qualification of the veterinary surgeon; and yet, we will take upon ourselves to assure him, neither examiners nor professors

will feel displeased with him for having done so; but rather, with us, will be proud to find we have a young man in our body of ability and courage sufficient to warn us of errors or misdoings whenever we may be found going astray. Manifesting considerable talent, well grounded in his education, and shewing promise of a most pleasing character in the profession he has chosen, Mr. Gamgee, last year, with much *éclat* passed the ordeal of that Board of the constitution and practices of which he is now pleased to find no little fault; at the same time that he expresses dissatisfaction with the system of education as pursued at the Royal Veterinary College of which he was so lately an *élève*. We do not say he has done all this without cause; on the contrary, we believe in his own mind he has felt ample reason for so doing; at the same time, we are bound to say he has done so without giving the subject full and sufficient consideration.

In respect to the plan of examination of the veterinary pupil at present pursued, Mr. Gamgee complains of the limited time devoted to each candidate; of the insufficiency of the divisional part of that time to elicit or ascertain the acquirements of the pupil in any one department of medical science; of the want of comprehensiveness of the subjects of examination; and of the subject of the anatomy of the horse being entrusted exclusively to surgeons who are supposed to know nothing beyond the anatomy of man.

Touching the shortness of the time—one hour—the candidate is actually under examination, the same opinion has oftentimes been expressed both in the council and board of examiners, as well as in places outside the College; and we verily believe it is one that would, under circumstances different from those under which it is mooted, be listened to with attention; but when we come to consider the general amount of knowledge possessed by the pupils who appear before that board, under the present status of veterinary education, we very much question whether one hour be not sufficient, considering how that hour is spent, to elicit the knowledge attained to a perfectly satisfactory extent. We are not saying that a quarter-of-an hour's examination on anatomy and physiology is enough to search a man whose mind is *largely* furnished with those branches of knowledge. But are veterinary students taught or do they learn either minute anatomy or profound physiology? And in regard to the diseases of the horse, or of cattle or sheep, are any one class of them, or are all of them put together, at all to be compared in number, complication, and importance with those attacking our own more tender and susceptible bodies? But, setting aside the pupil for a moment, there is another party to be considered in this matter—the examiner of the pupil. Suppose we were to grant two hours, in place of one, to the examination of the candidate; the consequence must necessarily be, either that the examiner must work double the time for the same fee, or that the

cost to the Royal College of Veterinary Surgeons for examinations must amount to double the sum now paid for them. And who is to bear this increased outlay? Would the pupil like to pay twenty guineas instead of ten for his diploma? Or, with reference to the examiners, could we ask the eminent medical members of the examining board, whose time is so valuable to them, and who are really conferring favours upon us as it is, to attend double the number of hours they now do for the small honorarium they at present receive?

In regard to the different departments of medical science in which the pupil is or ought to be examined, we quite agree with Mr. Gamgee, that something is wanting to fill up the gap of materia medica and pharmacy. They are subjects that might very well command another table at the board; and this useful addition would add another quarter of an hour to the present allotted time of examination. But, are the pupils prepared for examination on such subjects? As for veterinary jurisprudence, lameness as connected with warranty or soundness, and the practice of shoeing, such things having been nowhere taught, are by nobody expected to have been learned by pupils. Whose fault is that?

Whether, however, the present qualification test be sufficiently trying or not, no person would think of increasing the ordeal of examination so long as the standard of education remains at its present height. This would, indeed, be placing the cart before the horse. Supposing such a piece of injustice were done to the pupil—for cruel injustice it would at the present time be to him—what would the schools immediately set about doing? Why, precisely what they have done on former occasions when difficulties were set in the pupil's way through the apprenticeship clauses in the by-laws. They would instantly set up Boards of Examination of their own; the effect of which fresh erections would be, that, while the Board of the Royal College of Veterinary Surgeons was regarded by everybody as the *best*, as offering the only true test of qualification to practise, the majority of the pupils, for their own convenience and purpose, would flock to the others, leaving the Chartered College nought but a sign-board and a laughing-stock. If our "infant" art is ever to grow to any thing approaching the standard of liberal veterinary attainment, our schools must do all they can to solicit pupils from the educated classes of society, and to afford such pupils, during their stay at "College," every means and opportunity in their power for the acquirement of the varied knowledge requisite for them to become able veterinary surgeons. Has this been done? Whenever it shall have been, we promise Mr. Gamgee the Board of Examiners will not need to be reminded that their ordeal is not such, either in kind or severity, or in the length of time devoted to it, as the improved condition of the candidate for diploma may fairly entitle him to.

OBITUARY.

DIED, on the 11th January 1850, after a lingering and painful illness, borne with great patience and fortitude, Mr. Robert Read, aged 45, Veterinary Surgeon, Crediton, Devon, respected and beloved by all who knew him.

Mr. Read commenced his professional career by serving an apprenticeship to a chymist and druggist at Teignmouth, whose business was in part devoted to dispensing medicine for horses and cattle, there being at the time no veterinary aid in the neighbourhood to resort to in cases of animal sickness or lameness. In this department Mr. Read evinced particular delight; and from this period we may date the bent his mind afterwards took for veterinary pursuits. At the expiration of his apprenticeship, in 1826, he enrolled himself a pupil at the Royal Veterinary College, London. Obtaining his diploma the following year, he proceeded to Crediton, and set himself down in practice; and had not long been resident there before, through his superiority of skill over the farriers and cow-leeches around him, he became eminently and extensively known as a professional man of ability; while through his kindly disposition and unceasing benevolence towards all with whom he had to do, he was no less universally known than respected and beloved; the fruits of which conduct, a very extensive, lucrative, and thriving practice, he enjoyed during life, and has now left behind him.

About a twelve month ago he found himself compelled to first take to his bed. During the spring of last year he rallied somewhat. At the approach of winter, however, his disease again disabled him, confining him once more to that bed from which he never afterwards arose. That awful summons, death! come in what shape it may, is very rarely welcome; but most unwelcome of all is it when it comes to rob us of those who are busy spending their days here below in works of usefulness, of benevolence, and of charity to others. Such was the character of the late Mr. Robert Read.

The pages of THE VETERINARIAN will best attest what Mr. Read has achieved for veterinary science. His contributions date so far back as 1835; nor is our very last completed volume—that for 1849—without papers of importance from his hand. Besides many valuable observations and curious cases related by him, as occurring in the course of practice, we might point attention for excellence to his papers—on "The Nature and Treatment of Puerpural Fever in Cows"—on "The Epidemic of 1840 among Horses"—on "The Epidemic of 1841 among Cattle"—on "The Pathology and General Treatment of Cattle"—on "The Points of Cattle, and the Formation of Muscle and Fat"—and, lastly, to his paper (intended to compete for the prize of the Royal Agricultural Society) on the "Management of the Farm Horse."

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LAMENESS IN HORSES.

By WILLIAM PERCIVALL, *M.R.C.S. and V.S.*

[Continued from p. 10.]

SPRAIN OF THE FLEXOR TENDONS.

(Clap of the Back Sinews.)

SO prominent in the minds of horse persons stands this accident beyond all others, that when a horse is said to be "sprained," without any question being asked, the "back sinews," it is taken for granted, is the seat of injury; and those of the *fore* leg in particular. Out of two facts like these, two questions naturally arise:—one is, what is the reason the flexor tendons fail so much more frequently than others? another, why those of the fore limbs should fail rather than the flexor tendons of the hind leg?

I have more than once had occasion to direct attention to the important functions performed by the hind limbs in the acts of progression, and to contrast this with the comparatively light duties of the fore limbs. While one, like a pair of oars at work in a boat, are plying forwards and backwards, forcing the body onward; the other, more like stilts, are employed in sustaining the propelled parts, lest the body fall forward to the ground. I have likewise afore observed, that two such different functions necessarily distress different parts of the limbs; the hock being the part most exerted in the hind, the feet and legs the parts most tried in the fore limbs. What distresses the sinews of the fore limbs so much is the extreme distention, almost preternatural, to which these legs are put in hard galloping and leaping every time the weight of the body descends upon them, at a moment when they are stretched out to their uttermost, as they must be, to receive it; and it is in this identical position of limb, whenever any weight or force of extraordinary amount, or in any sudden or unexpected manner, descends upon them, that strain or sprain is produced. To

CAUSES, therefore, which put the sinews into such trials of their strength and tenacity are we to look for illustration. Hunters and racers, and steeple-chace horses, and such like, are the especial subjects of sprained legs. Horses ridden on the road, or as hackneys, are oftener lame from foot disease. Military horses are more frequently lamed in their feet than in their legs; though this again depends much on the exercises—or the paces at such exercises—to which the regiment they belong to happens to be put. Harness-horses experience sprains in their hind legs, in their fetlock joints in particular, they being the parts more exerted in draft. It is possible that thin-heeled shoes, by letting the heels down suddenly, may have some such effect, though I cannot say I have witnessed it.

But sprain may be produced in another way. The muscles to which the tendons belong may be called into such forcible or sudden action as to occasion it. Going at a tearing pace through deep ground is very likely, through excessive muscular action, to strain the tendons. Setting his foot accidentally in a rabbit-hole, a horse instinctively makes a sudden effort to disengage himself, and in that act is not unlikely to sprain his sinews. Should the foot happen to be set awry, or to slip on one side, a joint is more likely to be sprained than a tendon.

THE SYMPTOMS OF SPRAIN OF THE BACK SINEWS are in general unmistakeable; though this will depend on the form of disease with which, or period of time at which, the horse may come to be examined. Severe sprains will develop themselves early; sometimes as soon as done: slight sprains, on the other hand, may require several hours, and even days, to do so. This is another example, among many existing similar ones, to shew the imprudence of hasty opinions in cases of lameness. The horse, we will say, is lame: lameness being the usual accompaniment of sprain. The hand is passed down the lame leg; and swelling and heat is felt, and the horse flinches as our thumb and finger grasp the swollen part. The swelling may consist only in a small, soft, puffy tumour or "knot," as grooms call it; or it may be diffuse and general. The pain will be much greater in some cases than in others. The horse frequently stands with his lame foot flexed, reposing upon the toe to ease his sinews; and now and then will in trotting "drop" considerably upon the sound limb: in other (slighter) cases, the lameness will be but trifling. In very severe sprains the local inflammation and pain, on occasions, are so intense, that the system even sympathises with the suffering limb, and symptomatic fever is the consequence.

THE PARTS SPRAINED are naturally supposed to be "the sinews." But tendons being tissues both inelastic, and (per phy-

sical force) inextensible, they, themselves, can neither be stretched nor strained, so long as they maintain their cohesion of substance. To discover in what part the sprain or lesion is likely to be situate, it will be advisable to submit the leg in its normal state to anatomical examination.

If we strip or dissect off the skin from the flexor tendons, we find, underneath, between them and the skin, a quantity of loose cellular tissue; cutting away which we come to a close or proper tunic of the same substance immediately enveloping the tendons. This under or proper covering, however, is fibrous as well as cellular in composition. For the space of a hand's breadth below the knee the glistening (tendinous) fibres may be seen crossing obliquely over the tendons, as they run from the annular ligament of the knee to be implanted into the external border of the cannon bone, behind the external splint bone. This forms the sheath of the tendons. And when we slit it open, we discover a cavity possessing a surface of a synovial nature; and that a sac or *bursa* is thereby formed, which extends half way down the leg, and is there closed. Through the bursa runs the perforans tendon, which may indeed be said to form a posterior boundary to it. The interval between the flexor tendons and the suspensory ligament, in their front, is likewise filled with inter-uniting cellular substance. This brief and imperfect anatomical sketch may serve to illustrate the

Nature of Sprain. It will at once shew, that, although the tendons themselves are incapable of extension, and are too firm and strong in their texture to sustain hurt from any common accident, yet are surrounded, and connected together, and to the parts contiguous to them, by a soft delicate tissue which must, every time they are forcibly pulled or stretched, be extremely liable to strain and laceration; and this, in fact, it is, which in all ordinary cases, constitutes the true and sole nature of "sprain of the back sinews." Coleman defined such a sprain to be "an inflammation of the cellular tissue connecting the perforatus and perforans tendons together;" and this was taking a fair general view of its nature. To enter into particulars, we shall first have to notice the puffy swelling or *knot*, mentioned before, as being discoverable in the course of the tendons, about the middle of the leg; the pathology of which is, that effusion of fluid has taken place into the sac or bursal cavity but lately described as existing within the sheath of the flexor tendons: the effusion being, as it would appear, different at one stage—or, rather, under one form of disease—from what it is under another. Suppose, for example, the swelling, as it does in some severe forms of sprain, *immediately* follows the accident; we cannot, in this case, imagine it can con-

sist of any thing but blood poured out from ruptured vessels; on the other hand, supposing, as in the ordinary case, some time intervene between the sustaining of the injury and the appearance of the tumour, we take it for granted that the effusion is of the usual sero-synovial character, gravitating to the bottom of the sac. Frequently, in slight strains, it is not until the day following that on which the accident happened that any swelling is discoverable. I will relate a case to illustrate this.

SEPT. 4TH, 1848. One of the horses composing the Queen's Guard, after having walked perfectly soundly to the Horse Guards on the day before, in turning out to return to Hyde Park Barracks, was found to be so lame that, at the moment, it was thought he was seized with the "cramp." Nevertheless, he was brought to the Barracks, and there shewn to me. By that time he was so far recovered that he walked sound, but still evinced lameness in the trot. On examination, I discovered a little below the back of the knee, on the inner side of the leg, a puffy tumour extending half way down; not particularly tender to pressure, nor hot to the feel; and yet the sole apparent cause of the existing lameness. It manifestly consisted of an accumulation of fluid within the sheath of the flexor tendons. The rationale of the case in my mind being, that the horse had sprained his leg on going on guard the day before.

The above is what usually happens. But it is possible a sprain may not evince any signs of its presence for two or three days afterwards. A horse in the Regent Park Barracks was admitted into the Infirmary for "lameness," the seat of which, in the absence of any external sign, it was conjectured at the time might be in the foot. On the fourth day after his admission sprain of the flexor tendons patently shewed itself.

On the other hand, in severe cases, the sprain may declare itself even at the moment of the accident. My regiment was out exercising on Wormwood Scrubs. A charge was made across the ground. The horses were no sooner pulled up than one was found "dead lame." My assistant was instantly called to the spot, and found a "lump" upon the flexor tendon, above the middle of the leg, which convinced him the horse was sprained; or, as by those around it was called, "broke down." In this case blood must have become extravasated.

The bursal tumour may, then, be regarded as the simplest form of lesion from sprain. Beyond this, there may be similar effusions, producing "knots," in the lower division of the sheath; or there may be sero-albuminous effusion, generally, into the cellular tissue investing the tendons, filling up the intervals between them, and giving the leg that aspect and feel which is denominated

"round." This interstitial deposit is soft and compressible while recent; but, in the course of time, becomes of more solid and firm character; until, in the end, unless absorbed, it turns to consolidation of parts and thickening of the skin covering them, assuming after a time that hard callous nature that renders the enlargement irremoveable, or but very partially diminishable. But this may be regarded rather as a result of

SEVERE SPRAIN, or "BROKEN DOWN,"—as it is called—than of the *slight* form of injury. The phrase "broken down" would seem to imply there was something *broken* or ruptured. Pathological research, however, has failed to confirm any such popular notion. In his rapid course—in the race, in the hunt, or, as was mentioned before, in the charge—the horse fails all at once, i. e. *breaks down:* he comes to a stand, with the ailing leg held up or rested upon the toe, and can hardly manage to limp off the ground. Everybody around is impressed with the notion that the animal has "broken his leg." He is denounced as "broke down," and ruined, and fit for nothing but to be shot! All this has led to a good deal of delusive conception concerning

THE NATURE OF BROKEN DOWN. That distinguished surgeon, the late Mr. Liston, writing in his "Elements of Surgery" on the subject of RUPTURE OF TENDON—which does now and then happen in human practice—says, "such injury *often* happens to horses in what is called 'breaking down.' In them the tendon is occasionally *snapped actually through*, and the ends widely separated." Veterinary surgery, however, fails to confirm this. Coleman viewed "broken down" as sprain or rupture of the *suspensory ligament.* Blaine says the same thing, admitting rupture of the flexor tendons to be "very rare" Spooner, in his edition of White, says, "This accident (breaking down) is *supposed* to depend upon a rupture of the great suspensory ligament of the leg; though sometimes it is occasioned by a rupture of the ligaments of the pastern." And, further on—"I have met with two cases of rupture of the ligaments by which the two pastern bones are held together. It happened to two *nerved* horses. *Both came down upon the fetlock joints;* and were on that account shot." And nothing short of actually "coming down (to the ground) upon the fetlock joints" ought, in my opinion, to be allowed to constitute *break down.* However severe the sprain, and however lame and helpless the horse in consequence of it, still, no break down can or ought to be pronounced to exist in the absence of complete rupture; an accident of which we appear to have no instances on record as respects flexor tendon, and but few as respects ligaments. Nor are we to feel surprise at this, seeing that the tendon oftenest broken in man *(the gastrocnemius)* has, in comparison to

size, so much larger and more powerful muscles attached to it than have the perforans and perforatus tendons in the horse.

In SEVERE SPRAIN, however, although there is no absolute rend asunder of tendon, there exists, from the violence that has been used, sad lesion to various tissues. The cellular and fibrous sheaths, attachments, and envelopes are, no doubt, much stretched beyond their powers, and in places lacerated; nor have we any right to suppose that either tendons or ligaments come off unscathed; but that, on the contrary, fibres of one or both, in places, from forcible efforts of extension, occasionally yield and give way, and thus add materially to the complication of the injury inflicted. After all, however, that can be said by way of pathological exposition, much must be left to conjecture. One thing is certain; and that is, that violent inflammation follows so severe an accident, succeeding which come swelling and heat, pain, tenderness and excessive lameness. The horse literally hops upon his flexed limb, not daring to impose a fraction of weight upon it, nor suffering it to be extended or even handled ever so gingerly. The effusion which has taken place, by the third or fourth day after the accident, is so great that the limb is swollen from knee to fetlock, and even down to foot, and in some cases upward as well; the tendency of such tumefaction being to run on to the permanent agglutination of parts together into one solid mass, and by the changes from softness to hardness, and from hardness to callus and thickening, and even scirrhus, to render such unnatural union permanent and irremediable, causing in this manner roundness and hardness of leg, and stiffness, if not actual lameness, in action, for the rest of the animal's days.

In OLD HORSES WHO HAVE DONE MUCH WORK, such likewise is the case. Their fore legs are "round," and feel firm and skin-bound; they having been brought into such condition either from experiencing sundry sprains and injuries, or from excessive or long-endured work, the inflammatory or increased vascular action induced by which, in the course of time, tends to the same consequences. These are what are called *gummy* or *bummed* legs. Nor with such legs is it often that the fetlock joints do not partake of this roundness and solidity and skin-tightness, though the firm adhesion and close sitting of the skin is to be viewed often rather as the effect of stimulating treatment than of disease. All which remote and final consequences of inflammation in such parts, when once established, are entirely without the pale of ordinary remedy; requiring, if remediable at all, another and totally different class of therapeutic measures. Therefore will

THE TREATMENT OF SPRAIN consists of simple means, or com-

prise remedies of a higher class, according as the sprain is slight or severe, recent or of long standing. In most diseases of the muscles or their tendons, it is a primary consideration to put them, as organs of motion, into a state of repose. This is effected in two ways:—by putting them into a condition of relaxation, by bringing their points of attachment as near together as possible; and by absolute rest. In the present instance our object will be attained by a thick-heeled shoe, or a shoe raised at the heels by calkings, according to the requirements of the case. Trifling as this may appear to some, it tends very much to the relief of the animal whenever his leg is in pain, besides contributing to aid other remedies in bringing about restoration.

FOMENTATION of the leg, which is more effectual than the warm bath, is by far the best topical remedy for a recent and painful sprain. It soothes and softens pain, while it abates inflammation and relaxes the parts it is seated in. One of the best modes of using fomentation is through the medium of the spongio-piline. Cut two pieces, each large enough to wrap round the leg, and long enough to reach from the knee to the fetlock, and fold either piece in succession round the affected part, letting the other soak the while in the hot water. The water should be as hot as a man can bear to immerse his hand in, and that temperature ought to be maintained. One of the pieces of spongio-piline may remain bound, by a common bandage over it, upon the leg during the night: it will act as a poultice; and being fresh applied the last thing at night and renewed the first in the morning, there will be no fear of its growing dry. During the inflammatory and painful stage of the sprain I do not approve of *cold* applications.

A FULL DOSE OF CATHARTIC MEDICINE will materially aid our local treatment; and

DRAWING BLOOD FROM THE ARM OR TOE OF THE FOOT will, when inflammation runs high, prove one of the most direct subduers of it we can have recourse to. Supposing it does not materially inconvenience or pain the animal to have the shoe removed, I prefer, myself, abstraction of blood from the foot, as telling more directly on the congested parts. In a slight sprain, blood-letting is hardly called for.

COLD APPLICATIONS will be found preferable to warm ones, so soon as the heat and tenderness have quitted or become much abated in the sprained parts. After the relaxing effects of the fomentation, they will brace the parts—act as a tonic to them; and at the same time tend to extract any remnants there may still be of inflammatory action. Various kinds of evaporating and cooling and sedative embrocations are used for this purpose;

though I am not quite certain that any of them exceed much, if any thing, in efficacy, simple cold water, providing the water *be* cold, and the bandage* wetted with it be re-dipped often enough to maintain its low temperature. For those who think otherwise, however, I subjoin a couple of formulæ:—

℞ Ammoniæ Hydrochlorat. ..... ʒij	℞ Ætheris Sulphuric.
Aceti ..... ʒiv	Sprts. Vini Rect. āā ..... ʒij
Aquæ ..... ʒxij	Tinct. Lavandulæ co. i
M. fiat Embrocatio.	Aquæ ..... ʒxij
	M. f. Embrocatio.

As the tumefied parts grow cool, feel firmer, and bear pressure better, the bandage—which, to prove effectual, must be put on *secundum artem*—may be applied with more and more tightness; pressure through such means being vastly conducive, not only to the bracing and strengthening of the parts, but to the promotion of absorption of any remaining deposits in the sprained parts. In fact, continued repose—which may be gradually converted, first, into exercise in a loose box, and, subsequently, into walking exercise—with the unremitting application of the bandage, will be the best means we can adopt towards preparing the limb to once again sustain the animal's work.

THE TREATMENT FOR A SEVERE SPRAIN will, in its primary stage, differ more in degree than in kind from what I have been prescribing. In a violent case, the sooner after the accident the thick or high-heeled shoe can be put on the better: delay here is dangerous; since in a short time the leg may become so swollen and painful as to render handling or flexion of it too distressing to be borne, while the shoe is taken off to be replaced by another; a circumstance which will not fail to turn out a source of regret in the course of the treatment.

The fomentation will here require to be still more perseveringly laboured at. The dose of physic will require to be still stronger. And there will be no question about blood-letting; and blood in this case had better, indeed must, be taken from the plat vein, the leg being too tender to endure the foot being lifted and handled. And a larger quantity of blood should be abstracted—such a quantity, indeed, as may be said, on the first occasion at least, to have some effect on the system. These several remedies must be repeated, time after time, and perseveringly persisted in, according to the progress of the case, and other circumstances, which the judicious practitioner will not fail to note; the object being to subdue inflammatory action, and with that to allay suffering; which latter, on occasions, for a time at least, becomes our

* Linen bandages for the legs should be of Russia duck, 3 yards in length and 3½ inches in breadth.

leading consideration. We must not expect to accomplish this in a hurry. Great and extensive mischief has been inflicted; tendons, ligaments, thecæ, bursæ, joints perhaps, are involved in it; to the repairing of all which Nature must necessarily be allowed full and sufficient time. And even when all has been done that can be done, both by Nature and Art, towards restoration, will much remain still to be accomplished, to which the action of the parts will require to be aroused afresh by another and quite a different class of remedies; to wit,

BLISTERING AND FIRING.—Even in severe sprains, by the judicious application of the remedies recommended, and perseverance in their use for a sufficient length of time, soundness in very many cases is to be restored, providing the case be brought, so soon as it shall happen, under treatment, and providing it be not one of relapse or renewal of an old sprain. Inflammation nearly or quite abstracted, the leg becomes cooled down almost to its natural temperature; and although a good deal of thickening in places remains, and the skin covering the enlargements has an unnatural closeness and tensity—arising from adhesions existing between it and the parts underneath, caused by unabsorbed interstitial deposit—yet do the tendons perhaps play, or may from use after a time do so, with sufficient facility to enable the horse to walk and even trot soundly upon his still anormal limb. On the other hand, stiffness may remain very observable in action; or lameness, though much relieved from what it has been, may still continue, and appear to be permanent; rendering the animal, unless more can be done for him, unserviceable to his possessor, and a source of plaint against his veterinary attendant. Under these circumstances, blistering or firing comes to be considered. Nay, even under circumstances wherein there is no lameness—wherein soundness has been restored, either completely or sufficiently for return to work, must these potent therapeutic and surgical aids be called in, would we desire to preserve our quondam patient under work, and especially under severe or trying work, against the liability, I might almost say *certainty*, of return of lameness. There is no disease that I know of so likely to relapse under fresh excitements as sprain. Even horses with slight sprains require intervals of rest, and after they have been "cured" too, before they can be safely taken again into work; and in severe cases, no veterinarian or hunting man would think of a horse *standing* any violent work, at least—such as hunting, racing, &c.—without having "had the iron." Firing, here, is the remedy, and the only remedy to be relied upon. Blisters may answer in certain cases of first sprain, and that not of the worst character, and where the subject of it is not likely to be called on in the capacity of hunter,

racer, steeple-chaser, &c.; but the firing-iron, and *nothing short of it*, painful though it be to the feelings of the operator, and torturing to those of the operated on, is, I feel regret at being compelled to affirm, the sole means we have at present at command to save the "broken down" horse from the slaughter-house. By the firing-iron, have horses, originally worth their hundreds of pounds sterling, been raised from the knacker's price to their former value. By the iron, has many a broken-down hunter, and many a racer, been joyously restored to his station and rank in the field where his proudest laurels have been won.

REMARKS ON MR. REEVE'S EXPERIMENTS ON THE EXPANSION OF THE HORSE'S FOOT, WITH AN ACCOUNT OF SOME FRESH EXPERIMENTS.

By J. W. GLOAG, *V.S.* 11*th Hussars.*

To the Editor of "The Veterinarian."

Hounslow Barracks.

Sir,—I HAVE seen an article by Mr. Reeve, in the last Number of THE VETERINARIAN, which I feel called upon to answer, inasmuch as my neglecting to do so at once might be construed into a tacit acquiescence in the conclusions arrived at. This gentleman has written a very able paper on the question of the lateral expansion, and descent of the sole, of the foot of the horse: both of these facts he considers he has proved to take place in healthy feet under ordinary circumstances of shoeing. The means by which he has arrived at these conclusions evince a high degree of ingenuity; and the style of his paper throughout is courteous; and I will do him the justice to believe that it was his wish to arrive at correct conclusions. As I entertain different opinions, I beg to assure Mr. Reeve, whatever I may feel compelled to say in self defence, or in answer to his paper, that, personally, I have the best feeling towards him. I send you the experimental shoes I have used.

I am, Sir, your obedient servant,
J. W. GLOAG, *V.S.* 11*th Hussars.*

W. Percivall, Esq.,
Editor of THE VETERINARIAN.

Before entering on an inquiry into Mr. Reeve's paper, I will premise, that, from the long period which has elapsed since the

publication of my experiments, and no opponent having come forward to refute them by others of a similar character, I was induced to believe that there was either a wonderful apathy in the veterinary profession to a subject which one would naturally consider to be of great importance, or else, that my experiments had been tested and found correct. I know fully how difficult is the position I hold, and how hard it is to overcome long-established opinions; but I have not hazarded statements or deduced inferences from experiments without due consideration. And there is one thing certain, that, if my experiments were correct, which I conscientiously believe they all were, sooner or later public opinion will be in my favour; I therefore sincerely trust many of the profession will put both Mr. Reeve's experiments and mine to the fullest and most impartial trial. Surely, it is time that we should be able positively to declare what is the true action of the foot of the horse. Can any improvements in shoeing be based on a solid foundation until we agree upon first principles? Let the matter, then, be set at rest by investigation. It surely would not be time misapplied, if the talented teachers of the London and Edinburgh schools were to institute an inquiry into it. As to myself, personally, it matters little. I shall have done good by the agitation of the question, whatever the issue I must confess that the results arrived at by Mr. Reeve rather staggered me, and I saw at once what a peculiar advantage he had over me; inasmuch as he could apply active exertion whilst the experimental shoes were on the feet, whilst I had not this advantage with my experiments by wax; and I have no little pleasure, therefore, after submitting Mr. Reeve's plan to trial, to consider myself fully justified in maintaining my first opinion, and that these experiments, performed after the same manner as his own, prove the truth of my previous trials.

For the purpose of answering Mr. Reeve, I must beg the reader to take the last Number of THE VETERINARIAN, and follow me through his paper, which I shall now consider.

Page 62, *last paragraph.*—Mr. Reeve represents me to say, "that in a horse in a state of nature, or shod with the heels sprung, a certain action of the foot goes on in addition (*to the downward and backward action described*), namely, a slight declination of the whole hoof in the direction of its fibres, thus allowing the heels and base of the frog to descend, which I consider to be the natural action of the foot, and that by shoeing we prevent this natural downward and backward action." The last part of this paragraph is indeed my real and fixed opinion, and experience only confirms me in it; but Mr. Reeve has *added* the words which are in parenthesis, and here in italics, therefore making my statement erro-

neous. If Mr. Reeve will only be good enough to try back, and see what the words "in addition" means, he will find that they refer to the preceding paragraph of my experiments marked conclusion No. 2, in which I have described the varied ways in which concussion expands itself in the foot of the horse when shod with a shoe bearing evenly all round to the heels.

Page 63, *first paragraph.*—Mr. Reeve makes me to say, that, to provide for the action of the foot which I have described, I recommend a shoe much sprung at the heels.

I have very carefully looked over the experiments in question, and cannot find any thing tending to this. My belief in the action of the foot remains unchanged; but I know that the declination of the foot is only trifling, and that the degree differs in various kinds of horses with peculiar formation of legs and feet; and that the necessity for springing the heels, either one or both of them, or omitting it, depends on circumstances, such as the make and shape of the horse, his peculiar tread, his weight, &c., which it is unnecessary to enter into now: Mr. Reeve, therefore, *assumes* his statement. I advocate the principle truly, but it requires to be carried out with judgment, and not by blind chance.

Page 63, *third paragraph.*—In answer to this, I can only say, that, as a general rule, I do not consider it necessary, the upper surface of the shoe should be made concave; nor will harm result in healthy feet from the use of a shoe having a flat upper surface, so long as the sole is left strong, and the heels, one or both of them when necessary, lightly sprung. It is only when the sole is morbidly thin, and the foot cannot perform its function of declination, that the effects described take place*.

Page 63, *fourth paragraph.*—Mr. Reeve deduces as an hypothesis, that, under my ideas of the action of the foot, the unilateral shoe is useless. If Mr. Reeve had carefully read my Experiments, he would have found that I have advocated one-sided nailing, and stated that I approved of it on account of its slightly allowing of the downward and backward motion; but not from the general ideas entertained of it, i. e., allowing of the lateral expansion of the foot, to which action I cannot subscribe.

Page 63, *the woodcut.*—This makes it appear that the shoe I have used for experiment, or perhaps use in common, was of uneven thickness in the web, and very much bevelled off at the heels. For some experiments, it is true that I did spring the heels very considerably, although I generally did this by the abstraction

* Although making this statement, I know very well as a fact that heavy cart-horses, &c. with weak crusts, must have a slight concavity in the upper surface of the shoe, on account of the crust not being strong enough to support the animal, and breaking away, allowing the sole to sink.

of horn from the heels of the foot; but, as this woodcut was probably designed to place Mr. Reeve's meaning in a stronger light, more fully to explain his description, it does not signify: I merely mention it, lest the beautiful pattern should be set down as mine. I can only state, that I fully believe the whole hoof, when in a state of nature, yields slightly downwards and backwards, in the direction of its fibres. The sinking of the heels in an unshod foot, or in the foot having a shoe applied to it sprung at the heels, may be plainly seen, in the generality of horses, as the animal walks; and in some horses, if one heel only be sprung, and the other be made a fixture, the declination of the hoof will go on at the quarter when the space between the shoe and foot allows of it. Independent of this great means of getting rid of concussion, I have described many other ways, both in the shod and unshod foot, by which jar is removed; and also stated my opinion, that, when from any cause a certain natural action of the foot cannot go on, that the other powers are called into greater play.

Page 64, *the woodcut.*—The springing of the heels may be allowed, either by the bevelling off of the shoe at the heels, or slightly altering its bearing, or by rasping the horn slightly at the heels, or by the adaptation of an artificial spring. If you spring the heels by any of these means, you can both see and feel that the heels descend, the extent being modified by the conformation of the animal, and without the untoward accident so well shewn in the woodcut. Springing of the heels to excess, that is, beyond what was necessary to the spring of the hoof, would, doubtless, cause a tendency to the loosening of the nails; and in this, probably, consists a practical difficulty. In most feet it is the dead jar only that it is necessary to guard against, which a very light spring will obviate.

Page 64, *paragraph* 4.—Mr. Reeve here does not interpret me aright, but I believe unintentionally. He makes it appear that I consider there is a bending action of the hinder parts of the hoof, without the anterior parts partaking of that motion: this is very far from my meaning, for I consider it perfectly impossible. How could this take place, except by the separation or disruption of the fibres of the hoof, as there is no joint in the hoof to accommodate this motion?—therefore, Mr. Reeve's next two experiments, with gutta percha and clay, cannot affect me.

Page 64, *paragraph* 6.—As the premises under which this experiments are undertaken are ideas erroneously ascribed to me, the results cannot affect me. However, I will make a few observations. How could Mr. Reeve possibly have expected that a flat surface could have presented any thing but a flat impression? In

a state of nature, with the foot unconfined, the hoof will slightly yield backwards in the direction of its fibres. I suggest the adoption of the spring at the heels to accommodate, although imperfectly, this action. The unshod foot on the gutta percha may be compared to a horse in a state of nature, without shoes, standing on soft ground; and the only possible impression that could be made would be a deeper mark at the heels than the toe, betokening a gradual declination of the hoof. Mr. Reeve, doubtless, found this; but I would remark, that if the unshod horse, with a perfectly level crust, had stood on a hard and flat surface, that there would have been no declination of the hoof, as the heels would have acted as wedges to prevent it, as I fully explained in my experiments; it being contrary to the laws of mechanics, that a declined cylinder like the horse's foot, when acting against a parallel plane, could yield on pressure being applied to its upper surface, excepting space were left to admit of that descent; and that, on pressure being continued or increased, the sides will shrink inwards. This is illustrated by the inside quarter of the horse's foot, which is more under the centre of gravity, and generally sustains more weight, being straighter than the outside quarter; contrary to the ideas generally entertained, that weight causes expansion.

Page 65, *paragraph* 1.—I can only apply the last remarks to this experiment in clay; but I would remind Mr. Reeve, that surely, after taking plaster casts of the horse's foot, when supporting weight and when in action, both from the impressions of the feet in gutta percha and clay, that here was an invaluable opportunity at once to declare the difference, if any, in the actual measurement of the width of the hoof (that is, the lateral expansion) under these circumstances. As Mr. Reeve, however, is silent on this subject, I presume he did not find the slightest difference: he appears too close an observer to have neglected such an opportunity of silencing all argument—and what better experiment could possibly be instituted?

Page 65, *last paragraph.*—Much as I approve of the principle of the shoe, for experimenting to ascertain whether there be any descent of the sole under ordinary circumstances of shoeing, yet am I reluctantly obliged to state, that I do not consider the shoe used in this experiment calculated to shew a true result. I had a shoe made exactly as described by Mr. Reeve, according as I understood the description, but I found it very difficult indeed to see the points of the screws; and as the pieces which were welded, or brazed, to the heels, and crossed the frog to the transverse bar, gave, as I conceived, a great strain on that bar, I was of opinion

that, when the weight of the horse was thrown upon it in action, there would be a spring, however trifling, which would detract from a true result; so that, for two reasons, I could not adopt it.

Page 66, *paragraph* 1.—It is very far from my wish to make unnecessary difficulties, but, having experimented a good deal, I know what a trifling circumstance will interfere with the truth of the result; I therefore take for granted every thing as stated in Mr. Reeve's paper, and shall point out any of those circumstances which I consider could interfere with the experiment. "The foot was stopped during the night:" I presume it had not been a foot kept for a length of time in a moistened state, although I do not think, even were this the case, that, if all other circumstances were complied with, the moistened state of the hoof would prejudice the experiment; but I am uncertain on this point, therefore I name it. "The lower surface of the crust was made level from toe to heel." More explanation is required. The crust should not have been left of an inordinate growth, and extending beyond the junction of the sole, or have been in a moistened state; also, the weight of the horse, acting on this edge of crust, would cause it to give way. "A shoe was applied to the foot:" we are not told whether a seating was burnt or not. This I hold to be absolutely essential to the experiment; and further, that the crust should be pared down to the junction of the sole, and that the horse, in his trials of exertion, should be kept out of the wet, else some slight crumbling of the burnt horn might take place; all these things causing disturbance to the truth of the trial. If a shoe were applied without this accurate seating, if the slightest space were left at any part between the shoe and foot, I consider that there would be, inevitably, a slight giving way of the edge of the crust when the weight of the horse was thrown on the shoe. Again, "each pin was screwed into its hole, with the point towards the sole, until the closest approximation, without actual contact, was attained." I have before objected to the nature of the shoe, on account of the difficulty of seeing the very fine points of the screws; and I now state, that I consider it impossible, with the unassisted eye, and under the circumstances described, to regulate the distance of the screws with that extreme nicety required; and I maintain that the chances were, that the sole was as likely to have been slightly penetrated, as to have been left untouched, previous to the horse having been put to any exertion. I will make one more remark, and, from a similar circumstance having occurred to me in one of my trials, I can do so the more forcibly: however tightly the screws are at first fitted, if the shoe has to be heated, the screws will be found to be more or less loosened, and, should they at all project, the weight of the horse may and will

drive them in. Having objected to so many of the preliminaries, I cannot be answerable for the result, as stated in page 66, paragraph 4; but I will only mention, that I have experimented on the heavy cart-horse, and have not found the slightest descent of sole [see my experiments at the end of this paper]. At the same time, I am fully persuaded that Mr. Reeve only states what occurred under the particular circumstances attending that trial.

Page 66, *last paragraph, and page* 67.—The description of the shoe used for ascertaining the fact whether there be any lateral expansion of the foot at its lower circumference, is given with great clearness, and, as far as any shoe can be made for the purpose of shewing the existence of this motion, I think nothing better could be contrived. Yet I have many objections to make to this mode of proceeding. Those who are not accustomed to trials of this nature may think these remarks are perhaps trifles; but when a great fact is to be ascertained by these means, and the results, however insignificant, are to be taken in evidence, every thing tending against a truthful conclusion must be minutely inquired into. In page 67, paragraph 6, Mr. Reeve says, that "each pin was screwed into its place until its point came into contact with the side of the crust." Now, if Mr. Reeve means that the point came in contact, it would leave its mark; but I contend that neither Mr. Reeve's eyesight nor mine could tell accurately when the extremely fine point of such a screw actually touched. Again, if any screw was not correctly tapped and did not go in perfectly straight, or if the point of the screw was not exactly in the centre when the screw was driven inwards, the point being in a false position would inevitably describe a small circle, and mark any projecting part of the hoof, which might cause an erroneous conclusion to be arrived at; and this is a circumstance I have had particularly to guard against. Mr. Reeve did not burn a dead seating. There is a strong objection to this shoe which must, more or less, interfere with the result, and I know not how it is to be overcome, which is this,—that on account of the shoe not being fastened to the foot on the outside quarter, when a horse is put to quick motion, the shoe springs more or less, and a scratching of the hoof will be produced at any projecting part either above or below the point of the screw; above the point of the screw, if the shoe does not fit perfectly close to the foot when off the ground, but the scratch will extend slightly above and below the screw from the springing motion of the shoe when the horse is in action. The foot becoming gradually larger as it grows downwards, it will be most observable in the upper and back screws; and I ask Mr. Reeve, whether he has not noticed, when a mark has been left, that

it has not been a puncture, but generally an up-and-down cut or scratch. Under these circumstances, if you examine the shoe you will find it will lightly spring, and that these marks, when they do exist, if examined by moving the shoe slightly up and down, will be found to correspond and be produced from that cause. Another remark I have to make about the upper and back screws, which is, that, from the shoe being lightly sprung (which from being nailed tightly on the other side you cannot avoid), there will be a slight declination of the hoof, and that therefore the hoof will yield backwards and press upon the points of these screws; and should any indentation be made in the hoof, it will be found not to be a puncture, but an indentation much more extended, shewing a pressing down of the hoof on the point of the screw. I will remark another fact, which may militate against the experiment, but I only give it for consideration. When you take a horse's foot in your hands, especially a low-heeled horse, you will find that with the least force you can slightly separate the heels, or press them together, or press one heel above or below the level of the other. Now, when the shoe is only nailed on one side, is it not probable, that, when the horse stood on any slightly inclined surface, the heel which was attached by nails would be forced upwards and inwards, and the whole foot be thrown slightly on the incline to the inside, perhaps slightly disturbing the result of the experiment? I only mention it as a probable circumstance not to be overlooked: the fact of the easy yielding nature of the back parts of the foot has always been seized upon as a presumptive proof of its expansibility; but it is very clear, that, if Infinite Wisdom had not ordained otherwise, and if the weight of the horse upon the foot acted in any proportion to the force we could apply by the finger and thumb, the foot would open, and let out its contents when the horse was put in motion. It is essentially necessary that the substance of the iron in this shoe should be sufficiently strong not to allow a chance of the weight of the horse coming on the projecting edge, causing it to slightly bend or spring upwards. I have thus mentioned a great many circumstances requiring the closest attention in this experiment, and inattention to any one of them would interfere with the result, or give a delusive appearance: I have only to add that, in my experiments, I have not come to the conclusion Mr. Reeve has arrived at, although I have found the two upper back screws sometimes slightly to touch, at the utmost to the one-fortieth of an inch; the reasons for which I have given, and that this has been either an up-and-down scratch, or an extended indentation of the horn, but not a puncture; and there was no appearance in any way to lead one to suppose there was any lateral expansion of the lower circumferent border of the horse's

foot. [See my experiments at the end of this paper.] I am quite satisfied that, from the trifling circumstances which might operate against a truthful result in Mr. Reeve's experiment, this gentleman has only detailed exactly what he found to take place. Mr. Reeve has put the greatest result of any screw at one-sixteenth of an inch.

Page 68, *paragraph* 2.—Mr. Reeve, reasoning on my experiments, states that one fact is demonstrated from them, namely, that, in the case of a horse wearing a shoe "much sprung at the heels, the superincumbent weight is sufficient to bend the fibres of the horn." If Mr. Reeve will look more closely into my experiments, he will find that I can at once demonstrate the declination of the whole foot, as well as the heels, when space is left between the shoe and foot at the heels to allow of this motion: therefore he will see that I cannot hold such an opinion as that the heels descend without the anterior part of the foot also doing so, which I consider physically impossible, as there is no joint or fissure in the hoof to admit of this action.

Page 68, *paragraph* 3.—Mr. Reeve is again arguing on wrong premises, as I have explained before, in remarks to paragraphs 4 and 6, page 64.

Page 68, *last paragraph, and page* 69, *paragraph* 1.—Mr. Reeve here seems to take for granted that the heels have this independent action, and that they can be depressed at pleasure, whilst the weight of the animal in progression does not affect them in any way; in fact, that, if a space were left between the heels of a horse's foot and the shoe, in natural action, no approximation of the heels of the foot and the shoe would take place; but immediately the horse wished to do so, he could dart his heels down. This he instances by a horse sliding on his heels. He might have mentioned also the peculiar action at the commencement of laminitis, &c. &c. This independent action, however, completely puzzles me. I do think, if Mr. Reeve fairly considers the matter, he will come to one of two conclusions;—either that the heels do not descend at all under any circumstances, which I hardly think he is prepared to admit; or that, if they do yield downwards, it can only be along with the other parts of the hoof, part and parcel of which they are.

Page 69, *the woodcut.*—I cannot close my remarks on Mr. Reeve's able paper without expressing my pleasure at "the woodcut." This makes amends for all: one would think it was an illustration belonging to some of my papers, instead of to Mr. Reeve's. It bears a very close resemblance to the principles I have advocated, although carried out further than probably I would do, and with the addition of a spring at the ground surface, as well as the

upper. I am sure that, with so near an approach to a similarity of ideas as expressed by the drawing of Mr. Reeve's ordinary shoe, this paper has only been a war of words, and that Mr. Reeve ought to have been with me, instead of being against me.

I must now make a few remarks on the "Editorial Article." Knowing that Mr. Percivall has always held a different opinion to what I do on the action of the horse's foot, and as, on the publication of my experiments, he expressed his dissent, I cannot feel surprise that, with Mr. Reeve's paper before him, he should have considered it good confirmatory evidence of the soundness of his own views of the physiology of the horse's foot. On a subject so confessedly difficult as this, and upon the study of which so much time has been spent, it is not surprising that a difference of opinion should arise. I am sorry, on the present occasion, I cannot agree with the talented Editor of THE VETERINARIAN. Mr. Percivall does not enter into the consideration of the subject as an argument, but merely remarks one fact which fell in his way, which would lead to a different conclusion to that which I have arrived at; and which was, that, when he was making experiments with the horse-sandal, he found that if, instead of its being constructed as it now is, as a frog-bar, it were made of the shape of an ordinary shoe, about the substance of a racing-plate (with the rings, I suppose he means, at the heels or quarters), and thus strapped on the foot, that as soon as the horse was put into a brisk or forcible trot the shoe would be cast off; and if it were then examined, it would be found to have undergone sensible dilatation at the heels and quarters, a circumstance accounting for the shoe having been thrown off. I have only to remark to this, that although, on first consideration, this fact might readily convey the idea that lateral expansion of the foot was the cause of the widening of the shoe, yet that I should be more inclined to place the effect to other causes, such as the shoe having no nails to resist the tendency to be carried towards a wide part of the foot, and hence, from its thinness, becoming wider. We know practically, when a horse's shoe becomes much worn and thin at the toe, that in the process of wear, and from the shoe being carried forward, it will become very sensibly wider at the heels. The tread of the horse may have much to do with it. How very few horses tread perfectly level and flat! The slightest twist of the horse's foot on the ground might produce it, if we only take into consideration the weight and momentum of the horse acting on the thin racing-plate, one side of which was the opposing surface. Other causes would be in operation; such as the straps coming from the shoe over each heel, thus causing the natural bulging out of the heels, at each tread of the horse, to have a tendency to pull

the heels of the shoe asunder. Certain it is that lateral expansion alone could not act to the extent to make the shoe too large for the foot; else lateral expansion must be so visible and demonstrative a fact, that any inquiry into its real existence is perfectly useless.

In the last paragraph of the Editorial Remarks, Mr. Percivall has by some chance misstated me. It refers to the declination of the heels of the foot, and to that fact, that, if one heel of the foot is sprung, and the other heel of the same foot is not sprung, the heel which is at liberty will descend; shewing that, when declination of the foot can go on under any circumstances, it will do so. This, I think, is what Mr. Percivall intended to describe as what I had said, and this is consistent with the real fact*.

An Account of some Experiments on the Foot of the Horse, to ascertain whether, under ordinary Circumstances of Shoeing, the Sole descends, or the Foot expands at its lower circumferent Border.

Having objected to the shoe intended to prove the fact of the descent of the sole, as used by Mr. Reeve, on the grounds that I considered the points of the screws could not be readily seen, as also that from its construction there was a great liability of a spring or giving at its lower surface, as previously explained, I adopted some shoes with trifling difference of construction, but on the same principle, which I shall now describe, and, for facility of reference, each shoe will bear a number and a name.

1. *The harrow shoe.*—A plain shoe of good substance, and very wide in the web ($1\frac{5}{8}$ inch), having a very level wide seating from toe to heel, but slightly bevelled inside so as not to press on the sole, as also that the points of the screws may be more readily seen. Close to the inner rim of the shoe six finely pointed screws, rather more than one-eighth of an inch in diameter, were tapped and adapted. The shoe had eight nail-holes in the usual places, so that they could be used at pleasure, and it was five and a half inches wide.

2. *The harrow bar shoe.*—An ordinary shoe of good substance, with a perfectly flat upper surface, the web one inch wide, having the usual number of nail-holes pierced four outside and three inside, so that they could be used at pleasure. This shoe had a strong bar welded across it, so that it would be opposite to the anterior part of the frog; and through this bar, so as to be on each side of the toe of the frog, two finely pointed screws were tapped and adapted. This shoe was five and a quarter inches wide.

No. 3. *The lateral harrow shoe.*—This shoe, for the purpose of

* Mr. Gloag is quite right in this correction. The mis-statement originated in a misprint of *hoof* for *heel*.—Ed. Vet.

proving the existence of lateral expansion of the foot at its lower circumferent border, is made exactly as described by Mr. Reeve.

No 4. *Harrow shoe for the cart-horse.*—This shoe, for ascertaining the fact of the descent of the sole, was made exactly as described for No. 1, only of greater substance and very wide in the web (2⅜ inches). It was adapted with seven screws at regular distances close to the inner rim of the shoe. From the web of the shoe being so wide, the descent of the sole, if any, at all points round the frog up to the heels upon the screws, could be readily seen, and I considered it unnecessary to adopt another shoe similar to No. 2. This shoe was six inches and a quarter wide, and was adapted with eleven nails round the border of the shoe, so that they could be used at pleasure.

No. 5. *Lateral harrow shoe for the cart-horse.*—This only differed from No. 3 by its being of greater substance, and in the number of nail-holes round its border, so that they could be used at pleasure. This shoe was six inches and a half wide.

General directions.—In the application of the shoe to ascertain whether the sole descends, the following precautions were taken:—The sole was left as strong as circumstances would permit, the loose horn only being removed. The crust was pared down to its junction with the sole. The trial shoe was firmly imbedded by burning a seating. The nails were driven with great correctness and firmness; the screws always carefully looked to, to see that they fitted tightly, as, if they were at all loose and projected, the chances were that the weight of the horse, when they came on a resisting surface, would send them in. The foot of the horse was in its natural condition, and in no way prepared by being moistened previously. The screws were first measured by being passed into their holes nearly up to the distance required, and they were then taken out and cut to the proper size. In the application of the lateral harrow shoe, to ascertain the fact of expansion of the foot, the crust was lowered, as before, to its junction with the sole. The sole was merely cleared of its exfoliating portions. The nails on the inside and round the toe were very firmly driven, and the greatest care taken that a dead level seating should be attained by burning the shoe into its place, especially at the outer quarter, where it was free of nails. The outside quarter of the foot opposite to the screws was lightly rasped, rubbed with oil, and polished, so as to shew the slightest mark. Great care was taken in the adjustment of the screws to see that they went in correctly, and that the points were in the centre of each screw, else, in driving them inwards, the points would describe a small circle and wound any projecting horn. In the first experiment I used a fine visiting card to interpose between the point of each screw and the horn

and each screw was turned until I could not withdraw the card without scratching or tearing it. Finding the card too soft a material for this purpose, in the second and every succeeding experiment I used small slips of the thinnest tin in the same manner. I must warn those who are not aware of the power of a finely threaded screw, that the least turn of a finely pointed screw will send it through the tin, or at least leave a bulge which will shew a corresponding mark on the hoof, and this must be especially guarded against, as error will surely arise from a neglect of it. In each experiment, after the adjustment of the shoe and screws, the horse was mounted, and made to trot and gallop a short distance on dry ground; the horn opposite to the points of the screws was then examined by taking each screw out separately, and afterwards taking off the experimental shoes for further examination. Such being the order of proceeding in each case, it will be taken for granted that it will be unnecessary for me again to refer to it, and therefore only any different circumstances will be noticed.

1*st Experiment.*—A very heavy mare, wide chested, turns her toes slightly inwards; foot strong, and moderately concave. The off fore foot, the lateral harrow shoe, No. 3, used, having four nails inside and two at the outside towards the toe.

Result.—The upper screws had all touched the horn to a trifling degree, and the upper and back screws opposite to the heels the most so, I would say to the one-fortieth of an inch; the other marks were scratches. In looking carefully to these marks, I did not find a single puncture (properly so called), but they were up-and-down scratch, and the back screw had caused a bruise on the horn, that is, a much wider mark than corresponded to its point. I attributed this to the fact that the foot had slightly yielded backwards and downwards, and pressed on the point of this screw; the marks made by the other screws puzzled me. I fancied I had penetrated the card with the point of the screw, but this was not the case.

2*d Experiment.*—The same mare. The near fore foot, the harrow-shoe, No. 1, used; four nails outside and three inside; slips of the finest tin used instead of the visiting card, and the tin only withdrawn when the points of the screws scratched.

Result.—On the most careful examination of the sole, not a single screw had touched, and there was no mark whatever.

3*d Experiment.*—The same mare. The off fore foot, the first experiment repeated, but using the tin instead of the visiting card, and the greatest care taken in the adjustment of the screws.

Result.—There was no particular difference, excepting that the marks were confined to the two upper and back screws, and to the same extent as before.

4th Experiment.—A strong mare, with rather flat feet. The near fore foot, the harrow-bar shoe, No. 2, used; four nails outside and two inside.

Result.—Before taking the shoe off, the sole opposite to the points of each screw was examined, by withdrawing the screw; but no mark could be seen. The shoe was then taken off, but no mark was found; but whilst we were talking the matter over, the farrier, being an unbeliever, had wet the horn with his finger, and said he could see a mark of the point of the screw; and we did agree that there was a mark to the extent, I should imagine, of the thickness of the paper on which I now write. I must own I was surprised not to see some descent of sole at this spot, as it was the only place I did expect to find it. I must say that, strong as my convictions were that I was right about the non-descent of the sole under the ordinary circumstances of shoeing, yet that, to see a heavy horse pounding along with a lot of sharp spikes under his foot, made me a little nervous for the result.

5th Experiment.—A heavy-going mare, with flat feet. Off fore foot, the lateral harrow-shoe, No. 3, used, and with all the care that could be given to its adjustment.

Result.—No appreciable mark was found opposite to the point of any screw, excepting the most backward of the upper row, which presented the appearances I have before noted; the other marks, if they existed, were merely scratches or specks, and confined to the upper screw. (If I had wished to confine myself strictly to the lower circumferent border of the foot, I need not have put in the upper and back screw.) I can only attribute the mark in the last upper and back screw opposite to the heels to the fact, that, as the outside quarter was free of nails, the shoe did not lie light against the heels, and therefore there was a light spring which allowed of the declination of the heel against the screw to a trifling extent.

6th Experiment.—The same mare. The near fore foot, harrow shoe, No. 1, applied with only six nails, four outside and two round the toe to the inside.

Result.—There was not the slightest mark from any screw.

7th Experiment.—The same mare. The same foot, the harrow-bar shoe, No. 2, used with the same number of nails, and in the same situation.

Results.—None; not a mark.

8th Experiment.—A heavy cart-horse, with good feet; moderately concave, and plenty of horn. The off fore foot, the harrow shoe, No. 4, used, and the screws most carefully adjusted: two nails were left out on the inside quarter.

Result.—On the most careful search, not a single point had penetrated the sole.

9*th Experiment.*—The same horse. The near fore foot, the lateral harrow-shoe, No. 5, used.

Results.—The two last upper screws seemed to have made a slight up-and-down scratch, most insignificant in depth, not one-fortieth of an inch. On examining into this closely, I could find that the shoe lightly sprung, from not being nailed on the outside, and that those up-and-down marks corresponded with the points of the screws, as I moved the shoe up and down from the heel slightly by the hand. The depth of the scratch was not the one-fortieth of an inch.

10*th Experiment.*—The same mare; used as in the 1st Experiment. Off fore foot: being dissatisfied with the result of first Experiment, at least wishing to try and find the cause of it, I had it over again, and once more found the same results; but having got a wrinkle from my last trial, I again examined these scratches, and found they were produced from the shoe not fitting close to the heel, and therefore that, when the foot came to the ground, the point of the screw came against a wide part of the hoof, and, of course, scratched it; and also, that the declination of the foot caused the greater mark by the last screw.

11*th Experiment.*—A very fine heavy chestnut cart-horse, with good feet, but rather flat, and plenty of horn. The lateral harrow-shoe, No. 5, used.

Result.—There was not the slightest mark from any screw.

I must observe that, in this case, carefully considering former experiments, the greatest care was taken in getting a perfectly level seating, and nailing the shoe very firmly on around the inside and at the toe; and before the horse was trotted, &c. I found the shoe was very firm at the quarter where there were no nails. I will also remark that, after the experiment, I noticed that the cartilages of that foot were ossified, although not to a very great extent. How far the latter affected the result, I cannot say; I give it as I found it.

Having now gone through these Experiments, I do not wish to say more; I trust many will put them to trial. I will once again warn the experimentalist of the extreme nicety that is required, and that the slightest inattention on his part will infallibly interfere with the truth of the result. Before experimenting, he had better carefully read over this paper, which will warn him of the many errors he might fall into; and he may depend upon it, that the remarks are practical, and have only been arrived at by the closest investigation. As to the different results shewn by Mr.

Reeve, I have nothing to say; I know how easy it is to alter a conclusion when the one-sixteenth of an inch depends on it; and I am satisfied that I have stated enough to account for that difference between Mr. Reeve's plan and mine: who is right and who is wrong, let others determine. In conclusion, I express myself ready at any moment to repeat these experiments in the presence of Mr. Reeve or Mr. Percivall.

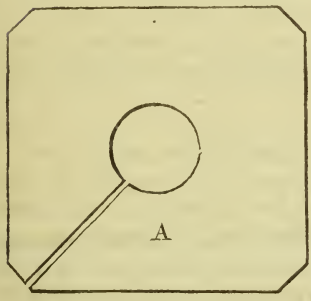
Having taken up so much of your valuable space, and having so fully expressed my opinion, I shall not consider that I am again justified in writing on this subject.

A GUTTA-PERCHA TRACHEOTOMY TUBE AND CATTLE PROBANG,

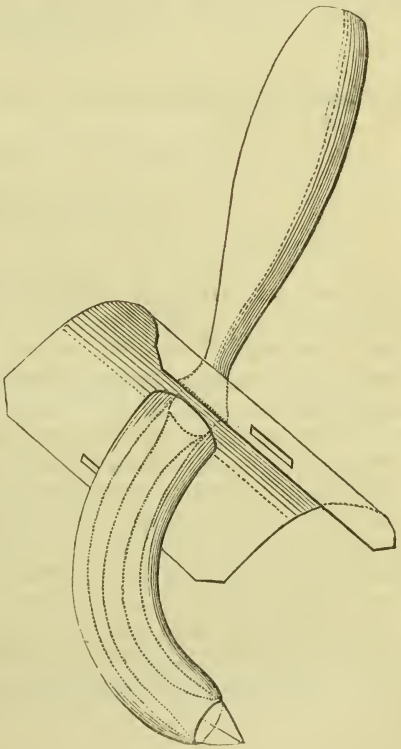
Invented by Mr. GEO. MURRAY, *Swansea.*

To the Editor of "The Veterinarian."

Dear Sir,—"NECESSITY," they say, "is the mother of invention." About two months ago I was greatly put to the shift for



A is a moveable piece of india-rubber curved to the form of the shield, and fitting on the tube between the neck and the shield: it is intended for the same purpose as Mr. Gowing's screw.



want of a tracheotomy tube; the consequence was, the invention of an instrument which I have endeavoured to represent by the sketch overleaf. The tube and shield are made of that useful material, gutta percha; and however improbable it may appear to persons who have not seen it, the instrument is almost without a fault.

It is sufficiently strong to resist ten times as much pressure as the cartilages can give it: its expense is a mere nothing; that of the tube only being from 8*d.* to 1*s.*: stilette, and all complete, will not exceed 2*s.* 6*d.* or 3*s.* I have only one by me at present, or I would have sent you a tube with the letter; but I will get one made, and forward it to you, that you may judge for yourself. The stilette should be slightly sprung, that it may be withdrawn easier, though the elasticity of the material does in a great measure surmount this obstacle.

I have also had a cattle probang made of it; and this is a beautiful instrument. Its expense ranges, stilette included, from 6*s.* to 10*s.* Its durability is, I think, unlimited.

The manufacturer of my instruments is Mr. G. H. Gale, gutta-percha patentee, 48, Wind-street, Swansea.

I remain, honoured Sir,
Your obedient servant.

14, Singleton-street, Swansea,
Feb. 9, 1850.

GIN IN UTERINE LABOUR.

To the Editor of "The Veterinarian."

Dear Sir,—WILL you oblige me by telling me how the following story is to be accounted for? I was conversing with one of Lord E——'s grooms the other day about "difficult parturition" in little bitches, when he told me that he had a small bitch, a short time ago, to take care of for one of his lordship's friends: she had her labour for three or four days, and she appeared in such pain, that he was about to kill her to put an end to her sufferings. He, however, altered his mind, and said that he would try the experiment of "intoxicating the bitch with gin." The plan succeeded admirably; the bitch became stupefied, and after a short time threw seven healthy pups. Perhaps, Sir, you will be able to account for all this. I have heard before of gin being used for bathing or washing

the teats when there was milk-fever, or any thing wrong with the milk.

I have the honour to be
Your obedient servant,
J. B. N.

22d February, 1850.

*** The gin operated in the same manner as chloroform or any other intoxicating agent would have done. By rendering the patient obtuse or insensible to pain, it enfeebled or put an end to those resistent powers which had, until then, but too successfully opposed the expulsatory efforts of the uterus.—ED. VET.

SURFEIT, AND CONSTIPATION OF THE STOMACH, IN A COW,

PRODUCED BY EATING THE INTESTINES OF SEVERAL DEAD ANIMALS.

By P. LEACH, *M.R.C.V.S.*

To the Editor of "The Veterinarian."

Sir,—SHOULD the following be considered worthy of a place in your valuable Periodical, it is at your service.

I am, Sir, your's respectfully.

On the 29th of September last I was requested to attend on a cow, the property of a butcher in this town, which, on examination, I found to be labouring under a slight attack of pneumonia. My usual treatment for that affection was resorted to, and in a few days she was approaching convalescence; when suddenly another and very different train of symptoms convinced me that very considerable pain existed within the stomach and intestines. I had produced the desired effect upon the bowels by means of a saline cathartic; but now I had profuse diarrhœa to deal with, the dejections containing numerous pieces of what I considered to be the mucous coat of the alimentary canal. There was not, however, the least appearance of blood either upon or ejected with these patches of animal matter; yet the fetor was most intolerable. My opinion now was, that there had been a metastasis of the inflammation from the respiratory to the digestive organs, and that the re-

covery of my patient was at best very doubtful. My treatment was changed to the administration of opiates, vegetable astringents, demulcents, and carminatives. I should have stated that there was no fever whatever, but rather evidence of exhaustion, a circumstance which I confess somewhat surprised me. This course of treatment was continued for four or five days without in the least altering the symptoms. I now doubted if the matter discharged was really the mucous coat of the intestines or not, and for the first time conjectured whether the animal had not met with and eaten some intestines of another animal. On washing and minutely examining some portions of this unknown substance, I became quite satisfied of two things; viz., that it was decaying animal matter that came away, and that it was not what I had hitherto supposed it to be. I consequently determined upon trying the effect of powerful cathartics and stimulants, to endeavour to empty the stomach and intestinal canal of whatever they might contain. In this way, to my great surprise and satisfaction, I succeeded in taking away at least a moderate-sized pailful of undecomposed intestines, which I subsequently ascertained to belong to an ox and three sheep which the boy had lost from the yard about a fortnight before, whilst this cow and some others were in from the field for the purpose of milking. I measured one piece of this discharged gut, and found it to be more than ten feet in length.

I had now simply to restore the exhausted powers of my patient, which was easily done by a few doses of tonic medicine and a light nutritious diet; after which all was well.

I forgot to state that the cow was about half gone in calf.

South Molton, Devon,
14th Feb. 1850.

CASES OF UTERO-GESTATION IN COWS.

By Mr. TATAM.

BEING a constant reader of your monthly periodical, THE VETERINARIAN, I perceive several cases of protracted utero-gestation in cows. I am a pupil with Mr. Joseph Clark, Horncastle, and trust at some future period to become a member of the Veterinary College.

A few months back, Mr. Edward Curtis, farmer, Kirkby Bain, called to ask Mr. Clark's opinion respecting a cow whose period of gestation had expired, and in whom the usual symptoms of

parturition had manifested themselves. But in the course of a day or two these symptoms gradually disappeared without any appearance of the fœtus. Mr. C. told him, nothing could be done for her then; but that, should the fœtus be alive, the parturient symptoms would return, when a live calf might probably be extracted; should it however be dead, that decomposition would take place, and the flesh pass away with the urine, the bones remaining within her uterus.

We heard no more of the case until the 20th November, being twelve weeks and a day from the time we before heard of her, amounting altogether to fifty-two weeks and a day from the time she had had access to the male subject. At this time the usual parturient symptoms re-appeared, and with considerable difficulty a live bull-calf was brought forth. The bystanders were amazed at the enormous size of the calf: its teeth, limbs, and hair, represented a calf of six months old. Had it been in an ordinary fleshy state, it must have been impossible to have taken it away alive. I saw it the other day, when it appeared to be doing well, but considerably larger than the other calves, some of which were from five to six months older.

On the 25th September, 1849, Mr. Clark was requested to attend upon a black draught mare, the property of Mr. John Headland, farmer, Bramston, near Lincoln, which had been for some time a confirmed roarer, and for the last ten or twelve months had gradually been getting so much worse, that at length she had become incapable of performing any kind of work whatever: in fact, she could not walk more than a dozen paces without danger of suffocation. She had had the usual treatment applied to her, viz., blisters, setons, &c., but all had proved to no good effect; and they were just on the eve of destroying her, when some one advised Mr. Headland to have some further advice respecting her. Accordingly, they sent for Mr. Clark, and we at once attended. The noise which the mare made in respiration was heard by us at a considerable distance before we reached the premises. Mr. Clark examined her larynx, and at once decided on performing tracheotomy, which gave instant relief. The mare commenced her work a few days after the operation, has continued to do it with the tube in her trachea, with ease, and is able to perform an equal amount of work with any horse on the farm: she has since gained flesh as fast as she previously lost it.

*** How long was she, or will she be, able to wear the tube? and what was, or is, her condition of wind, since or after its withdrawal?—Ed. Vet.

VERERINARY BENEVOLENCE.

Newry, Ireland, Feb. 2, 1850.

Sir,—I SEE, by one of the London papers, a notice of a most distressing case brought before the magistrates at Westminster, through the instrumentality of a benevolent lady, which, as it casts a slur upon the members of our profession, I trust I may not be considered intrusive, if I take the liberty of calling your attention to.

It is that of the widow of a Mr. John Turner, who appears before the magistrate in a state of perfect destitution, and evidently suffering from illness. She had formerly moved in a very respectable sphere, as the wife of a veterinary practitioner; but, owing to misfortune, she is now reduced to the most abject want, and is compelled to appear in a common police-office as a suppliant for charity. Now, Sir, is not this a disgrace to our profession? When shall we, as the members of other professions have done, commence to establish a refuge for our decayed members and their distressed widows? Surely we might contribute a tithe of our earnings yearly towards their support when old age or poverty overtakes them. Our profession is steadily advancing in prosperity and respectability; and let it not, for the sake of a trifle yearly from each member, be subjected to the stigma of having to thank public charity for that relief to one of its members, which should by right be awarded by the veterinary body.

Trusting you will give the subject your able advocacy, and endeavour to stimulate our brethren to an effort in the right direction,

I am, Sir, your obedient servant,

A STUDENT.

The Editor of "THE VETERINARIAN."

*** If "A Student" will look into the volume of THE VETERINARIAN for 1846, pp. 8 and 186, he will find he has been anticipated in his benevolent object by Mr. Baker, who, like himself, feeling the great desirableness of some Professional Relief Fund, submitted that year suggestions for the formation of one; and was only stayed in the prosecution of his philanthropic views—in which he was supported at the time by several leading men of the profession—by its being the general opinion that the period was not the most favourable for their accomplishment. Such a project might, we think, at the present time, be renewed with a better chance of success.—ED. VET.

INFLUENZA, FOLLOWED BY TYPHOID PNEUMONIA, LAMINITIS, AND DROPSY.

By Mr. N. J. STEEVENS, *Hayes.*

Sir,—I BEG to apologize for the liberty of writing to you; but being an old subscriber to THE VETERINARIAN, and possessing your other works, and not seeing a case similar to the following in either, I am induced to ask your opinion of it. If you think there is any thing interesting for your readers in it, I will send you the case in detail.

Three valuable horses in the same stable were attacked with influenza last month. Two of them soon recovered under the usual treatment. The other, after two days' attendance, shewed symptoms of pneumonia, for which I treated him. The pulse warranting me to abstract blood, I did so, cautiously. Metastasis of the disease took place; it fell in the two fore feet. For this I locally treated him. The inflammatory symptoms abated, and a tumefaction of all four legs then took place, to that extent that the animal was almost immoveable; the sheath, belly, nose, &c. all shewing the sequel was anasarca. I inserted a rowel in the chest, and blistered as soon as the lungs appeared affected. In twenty-four hours the rowel sloughed out, leaving a deep unhealthy ulcer. The large tumours all over the body, &c. now began to suppurate, although fomentations and cooling anodyne lotions were constantly applied. Afterwards, the tumours commenced sloughing off in an awful manner, several to the extent of six or eight inches square and an inch in depth, attended with an effusion of bloody pus. The horse is now covered with large scars, and is nought but a wreck of what he formerly was, although nearly convalescent.

If you will give me your opinion what the nature of the sequel of the disease was upon the cover of your Journal, or in any other way you think proper, you will much oblige

Your humble servant.

Hayes, 11th Feb. 1850.

*** Our opinion is expressed in the heading we have given to the case. We have a similar case under treatment at the present time.—ED. VET.

CASE OF RUPTURE OF THE SPLEEN.

By RHESUS.

My dear Sir,—As the following case may not be uninteresting to the readers of your Periodical, nor, perhaps, more devoid of instruction because described by a non-professional, who has had

ampler opportunities of watching its history, and has felt a nearer concern in the welfare of the subject of it than commonly befals the educated practitioner, I confidently venture to offer it for your insertion. The unpretending simplicity of the narrative must atone for any lack or misuse of technical phraseology, and the cheerful contribution of his mite to your treasury of veterinary lore must counterbalance the insufficiency of the giver.

In October 1846, I purchased of a neighbouring gentleman a mare, aged twenty-two years, got by Master Henry out of a Sir Oliver mare, for breeding purposes. When I bought her, she was looking very unkindly, was very lean, and had a chronic cough. She had been put to Heron that year, but was not in foal; nor could I get her to stand to the horse the following year, though I tried no less than four different thorough-bred stallions: so I rode her as a hack; but her cough continued so troublesome, and her kidneys beginning to exhibit symptoms of disease, evinced by a straddling gait, difficulty in rising, temporary lameness, shrinking on pressure across the loins, slight discharge of blood from her shape, and pawing at her belly, I thought it more humane to give her a run at grass for the remainder of her days, with a broad charge across her loins during the winter months, and a shed to run into. In the spring of 1848 she was altered so much for the better, having entirely god rid of her cough, and acquired a blooming, silky coat, that I put her to a four-year-old half-bred horse, who stinted her at the first leap. What is usually the case under such circumstances, and, indeed, is the surest evidence of impregnation, her condition mended surprisingly; so that, when winter again set in, she appeared thoroughly armed to encounter the severities of the season. A top of her winter's coat, she again received the protection of a charge across the loins, perfectly impervious to any fall of weather; and though she fell away in flesh, notwithstanding the liberal allowance of a most generous diet, yet she moulted kindly, and, with the aid of my midwifery, brought me a healthy but lean and weakly filly. She went three weeks over her time, a thing not uncommon with aged mares; and a month after foaling, being much increased in flesh, she was again put to the horse, a thorough-bred one, and stinted at the first leap. She gave her offspring but little milk, and that of a very poor quality (I often tasted it); so that, in spite of all my care, her filly continued stunted and dwarfish, and became tod-bellied. The dam herself, however, grew absolutely fleshy and fat; I was, therefore, under no apprehensions about the approaching winter. Still persisting in the application of the charge, from which I fancied so much benefit had accrued, I left her to subsist on the fog-grass until it began to fail, when I gave her a good feed of

ground oats once a-day, which she seemed to mumble with hearty appetite (she had no upper incisors, and many of the molar teeth of the under jaw were worn to the stumps). After the weather waxed more inclement I housed her at night, giving her a bucketful of bran mash, with a bountiful allowance of crushed oats, and a handful of malt steeped therein, and as much chopped straw, with a little bran, split beans, and oats, as she chose to eat, with now and then a handful of new hay. Let me observe, by the way, that it was wheaten, and not oat straw, as experience proves that the latter is apt to set horses' teeth on edge; an action which, I strongly suspect, is also attributable to fog-grass: at all events, the mare could not grind her food half so well immediately after she was housed, as she did in the course of a fortnight after—a phenomenon whereof I was both ear and eye-witness. Under the above treatment I thought she began to shew thriftier signs; her coat proffered to moult, and the charge, in consequence, gradually loosening its hold, with the help of a lusty roll over (a feat duly performed by her the first thing after being turned out in the morning), came away about five days ago.

Nothing had hitherto occurred to awaken any serious misgivings as to the probable issue of her present time of gestation, which was to expire on the 3d of April. It is true that, on one or two occasions, I saw, or fancied I saw, a faint inclination to strike her belly with her off hind leg, and a transient leer of momentary pain on her countenance, half averted to her flanks. I set this down, however, but as the promptings of an over-curious jealousy. Her dung was soft, and almost pultaceous; and, if not so critically digested as I could have wished, yet was correspondent enough with her powers of mastication. Her few handfuls of new hay, nevertheless, I ordered to be discontinued; and that she did not mind its withdrawal, her preference, when both were at her option, of the cut stuff and oats, plainly attested. She certainly was more listless in her manner, nor did she attack her food with quite that eager zest that she had betrayed during the winter of 1848-9; but then she was older, was breeding the second consecutive year, and was supplied more frequently with it. Now for the catastrophe.

On Sunday, the 10th instant, my other duties disabled me from seeing her. On the following morning, having eaten her usual feed, she was taken to her paddock about 9 o'clock, A.M.; but the day being squally, with showers of sleet, and her back denuded of its weather fence, she was put in a roomy loose box there, in company with a three-year-old filly that had contracted a warm attachment to her, and with whom she was always on the best of terms. About 12 o'clock the servant had to take oatmeal gruel up for four suckers (her own filly being one), who were also domiciled in the

same paddock, and to whom the loose box was mess-room and dormitory. I accompanied him, and while he attended the more youthful parties, I was occupied in serving out their rations to eight others, yearlings, two-year olds, and a three-year-old mare in foal, in a paddock immediately contiguous. If I may be pardoned the digression, these eight poor dumb brutes would furnish no contemptible lesson to many an assembly of rational animals by the quiet, orderly manner in which they congregate in their common hall—a capacious thatched shed—to partake of their three daily meals. There is no kicking, no biting, no jostling, but each eats out of the same manger what is set before him, and allows his neighbour to do the like. Having finished my own task, I passed on to overlook the others, and on entering found three oak boards knocked clean out of the side of the box. I instantly turned my eye on the old mare, and perceived at a glance by which animal the mischief had been done. Her coat lay as glossy and smooth as unpiled velvet, and her face wore a haggard look. She was heaving at the flanks, but she did not absolutely sweat, though her skin was dank and warm. I led her gently out into the open air, and closely watched her. She had dunged copiously, twice in the box (her dung I knew), and she again dunged, but apparently with some little straining, in small quantities, after being fetched out. Her dung was yellow and pultaceous. She pawed at her belly with her off hind leg, and scraped the ground somewhat earnestly with her off fore. She seemed half disposed to lie down, but irresolute. The most alarming symptom in my eyes, however, was a nervous curling back of the upper lip, like a horse snuffing a mare. I cannot boast of your experience, Sir, but to me this writhing of the lip under such conditions is the patient's death warrant: 'tis the solemn outward index wherewith mysterious nature points the observer's eye to the unseen but mortal sickness which is sapping life's citadel within. Couple with it a clear ringing neigh—a neigh whose tones will haunt the listener's ear for months, and once heard will never be forgotten—the passing bell itself is not a more certain bodement of speedy dissolution.

As soon as the suckers had drunk their pailful of gruel, I led her back into the box. She moved heavily, and in pain. I now set to work to handle her abdomen all round, and by and by discovered that the rim of the belly close behind, and almost at the bottom of the false ribs, was burst to the extent of about a crown's size; the skin without a scratch; there were also two puffy spots on the ribs themselves. I threw a cloth over her, and went off instantly in quest of Mr. Hughes, our able and obliging veterinary surgeon.

On inspecting her shape, I found a slight stain of blood upon the lips of it. She was brought down home, and placed in her loose

box. The symptoms no way abating, but rather exacerbated, she had one drachm of calomel and two of opium given her. She was offered some chilled water, and appeared very thirsty: a small quantity only was allowed her at first, but afterwards as much as she liked. Meantime her pains got worse, expressed by pawings at the belly with the off hind leg, and scrapings or stampings with the off fore. She had not staled; she dunged no more, though once and again she made a feint to do the one or the other. Four drachms of aloes were now given her in ball. Mr. Hughes examined her per rectum, but found no dung, and her bladder soft. Her pulse had been at nearly 80, but was soft and weak; her respiration unequal. About ten o'clock she began to sigh and breathe hard, her other symptoms becoming hourly worse. She had drunk a bucketful of tepid water, and eaten a bit of sloppy mash; but she seemed to do so rather by way of lulling pain through diversion of the senses from her immediate sufferings to an indifferent act.

I visited her at two; she had been down, and was risen again, bathed in a clammy sweat; indeed, between her off leg and her mammæ the sweat was churned to the consistence of new butter. Her ears were not cold, and her legs had been so thickly wrapped in flannel bandages, that they, too, were of a fair temperature: but that ominous upturning of the lip was more and more repeated; her mouth was dry, and her looks most careworn and woe-begone. There was none of that suspicious prying at the flanks, with the impatient wafture of the head, that with such mute eloquence proclaims the presence of colic or enteritis. She stood on the same spot, but without a moment's respite from pain, her muzzle depressed almost to the floor, as though she would fain lie down, but dared not. At ten o'clock in the morning she expired with one terrific struggle, bursting open the door, the lock being wrenched off, and falling with her forehand through into the yard. . .

I had her opened at once, and the first object that rivetted my attention was a red stain upon her entrails. I touched it, and found blood upon my hand. After removing the pendulous hammock wherein swung a fine colt foal, the autopsy proceeded. Her lungs we found tuberculous, her kidneys somewhat soft and spongy, her liver very pale, and her heart without much blood. Her abdomen contained swimming about it nearly three gallons of blood, and the spleen was ruptured in three places on the concave side, twice lengthwise; of which the largest rupture was about an inch and a half below the angle at the top, the next an inch below it, and the lowest, crosswise, almost at the very tip: at each rupture the blood was clotted. The spleen appeared gorged

throughout, but particularly so at the upper angular end: it weighed 7½ lbs., and was very lacerable.

Before the post-mortem examination, my surmise was, that the mare had attempted to roll in her box, that she had got cast, and in her struggles had kicked out the boards, and ruptured herself; but afterwards I felt satisfied, with deference to your better judgment, that I had confounded cause and effect. A minute scrutiny of the boards, and the marks upon them, testified plainly that the uppermost was out of the reach of her heels, at their utmost stretch, when she was recumbent on her back; and a small fracture in that immediately above the highest that was knocked out held adhering to it a few grizzled hairs, which corresponded precisely with the colour of those upon her forehead, where she had been partially scalped. I infer, therefore, that her spleen was diseased, possibly had been so some time; that engorgement occasioned rupture; and that upon this her throes were consequent, in the agony of which she had dashed the uppermost board at least out with her head in falling.

What the function of the spleen or melt* is, I know not; but, if it act as a reservoir for blood when the stomach is empty, it may be that the mare was suffered to remain out too long eating the innutritious fog-grass, and afterwards too suddenly supplied with over-great plenty of blood-making food (she was very fat inside); but, as I am no veterinarian, this is wading beyond my province, and "*ne sutor*" forbids me to say further.

Believe me,

Your's very faithfully,

RHESUS.

* In this neighbourhood it is termed *lung:* in the county of Durham it is known by the name of *cat's collop.*

REVIEW.

Quid sit pulchrum, quid turpe, quid utile, quid non.—Hor.

Recueil de Mémoires et Observations sur l'Hygiène et la Médecine Vétérinaire Militaires, *rédigé sous la Surveillance de la Commission d'Hygiène, et publié par Ordre du Ministre de la Guerre. Tome Deuxième.* Paris, 1849.

Memoirs and Observations on Military Veterinary Hygiene and Medicine, *compiled and arranged under the Superintendence of the Sanitary Committee, and published by Order of the Secretary at War.* Vol. ii, Paris, 1849.

[Continued from page 92.]

In once more opening these interesting volumes, it is neither our intention nor our desire to foist upon the civil readers of The Veterinarian matter which could alone concern and please the military practitioner. Both the civil and military veterinary surgeon must feel alike interested in the improvement of their art; and both must feel equally persuaded that the cultivation of our science in extensive fields for observation is the only legitimate channel through which such improvement can be made and received, and that it matters little where or by whom or through whom such cultivation is carried on. That veterinary practice, like medical practice, differs in some respects in the army from what it does in private society we know very well: still, will the same phenomena take place in health, the same diseases present themselves for treatment, affording opportunities for observing and recording both, which oftentimes are more complete and embraceable in the army than in private practice, and which, consequently, so far afford the military veterinarian, in description of them, some advantage over the civilian. On the other hand, there are instances where opportunities preponderate in favour of the private practitioner.

On the present occasion, our object is to invite attention—and

to crave indulgence of our readers in doing so—while we cull for notice a few remarks, suggested in the course of the disposal of the remainder of the questions which, it will be remembered, we gave in detail in our No. for December last,* as being submitted for answers to the several regimental veterinary surgeons of the French army.

To the 8TH QUESTION the answers are—

That diseases of the respiratory apparatus were treated by blood-letting, dietetic regimen, edulcorated drinks, expectorant electuaries, revulsives to the skin, and issues, and at certain stages by emetics, and towards its decline by kermes mineral; added to which were used fumigations and lavements.

Opinions on the transmissibility of chronic glanders from one horse to another are extremely divergent; and, from the nature of the regulations enforced, are likely to remain so. Out of 136 army veterinary surgeons called upon to express their opinions—

12 have given no opinion;
24 are of uncertain opinions, neither for nor against contagion;
36 are non-contagionists;
64 are contagionists;—making the whole number—136.

To the 9TH QUESTION the answers are—

That the causes of diseases are divisible into *general* and *special:* the former consisting in the numberless meteorological fluctuations; the latter, in vicious breed; in purchasing for use 3-year-old horses; in the catarrhal and pulmonary affections such are obnoxious to; in lymphatic constitutions, unable to bear service; in breaking horses prior to their fifth year; &c.

To the 10TH QUESTION the answers are—

That the hygienic means put into practice are,—1. Ventilation, taking care that no currents of air entered the stables but *behind* the horses, and that such currents were diminished or arrested after the return of the horses either from exercise or duty; and that the strictest cleanliness was enforced. 2. Dressing the horses within their stables in autumn, spring, and winter; but in summer, in fine weather, at evening, out of doors. 3. Regularity in feeding; and giving the corn immediately after water. 4. By regularity at exercise; the duration being, either at work or walking out, from two to two-and-a-half hours. 5. In localities where such has been practicable, the horses have been led into water, by way of baths, twice or thrice a week, during the hot weather.

* Which see, page 691.

6. In all regiments, on return to their stables from duty or exercise, the horses are at once unbridled and unsaddled, and dressed thoroughly, and afterwards had their bodies covered.

Of the 11TH QUESTION we need take no notice, as little concerning us.

In answer to the 12TH QUESTION —

The horses composing the French army are of French and foreign breed. Almost all the former are furnished by twenty-one remount depôts, established in various parts of France, where most breeding is carried on, a small number being purchased, at the discretion of the authorities of the regiments, in localities where they happen to be garrisoned. The foreign horses are provided by temporary depôts, established in 1840 and 1841, on the northern frontiers; and a small number come from Denmark and Hanover, through a special commission.

Of 44,111 horses in the interior of France, 26,060 come from remount depôts; 2750 have been turned over from one regiment to another; 864 have been direct purchases; 2318 remained still in remount establishments; lastly, 12,111 came from temporary depôts.

In answer to the 13TH QUESTION —

The system of podometric* shoeing, cold, is that in use in the French cavalry; and the reports of the different veterinary surgeons shew that it is fully carried out in the several regiments, in accordance with the ministerial order of July 28, 1845.

The question proposed as the subject of "Memoir," for 1848, was, "Typhoid Affections in Horses of the Army." But one veterinary surgeon wrote on it. Since the Memoir, however, contains a good description of the symptoms and changes recognised in this disease, with some useful remarks on typhoid broncho-pneumonia, the author of it, M. Gillet, chief veterinary surgeon to the 7th Lancers, has been deemed worthy of being rewarded with the silver medal.

At another time, we may be induced to look over this, as well as the "Memoir" for the year before, on "Farcy."

* The "podometric system" consists in taking measure of the horse's hoof, and making a shoe in accordance therewith, to save the necessity of applying a hot shoe to the hoof.—ED. VET.

THE POISONING OF CATTLE WITH LEAD, *popularly known as* STAGGERS OR HEAD DISEASE. *Read before the Veterinary Medical Association, Edinburgh,* 1847. WITH AN APPENDIX AND ADDITIONAL NOTES. *By* M. CUMING, *V.S., Ellon.* Pamphlet 8vo, pp. 28. Avery, Aberdeen; Sutherland and Knox, Edinburgh.

A MEDICAL man never experiences greater satisfaction than when his anxious searches after the origin or cause of some fatal sporadic or endemic disease among living beings, be they men or animals, have in the end been crowned with success. Having made the desired discovery, he exclaims in ecstasy, *J'ai découvert le pot aux roses!* He feels as though he had the lives of those still living in health in the region of the pestiferous agent at his command; while he loses his regret for those that have fallen victims to it in the joy he experiences at their dead bodies having auspiciously furnished him with the knowledge by which he is empowered to save others from the same grave. The disease, the subject of the pamphlet before us, had been rife, and as fatal as rife, in the part of the country in which Mr. Cuming practised. During May and June —45, his attention was first called to it. Ten or twelve cases of what were called "staggers, or head disease" occurred, which at the time appeared to him "most anomalous." Animals were taken unwell, from being slightly became alarmingly ill, and in from thirty to sixty hours afterwards were dead corpses. And to render matters worse, their opened bodies exhibited but the appearance of lesions of too trivial a nature to warrant deductions from them of any practical or useful description. Although there was not that uniformity of symptoms and post-mortem relic, however, which epidemic diseases are wont to bewray, yet did there exist, on reflection, sufficient "points of coincidence" to suggest the inference that in all the same identical cause had been in operation.

"I had seen," says Mr. Cuming, "the same disease frequently before, although I had never had to do with treating it. It is no stranger in the district where I then practised, as I could reckon up, upon the authority of the owners of the animals, as many as *fifty fatal cases of it within the circuit of three miles, and a period of twelve years.* By the farriers in the quarter it is called 'the

ill trouble,' and allowed to pass as a visitation with which there is no use contending. And in other districts it is popularly known as the *head disease, staggers, wudness in the head, &c.*, names graphically characteristic of the symptoms observed."

Being called in, ignorant as he was of the nature of the malady and hopeless of its cure, Mr. Cuming was, as a matter of course, expected "to do something." He tried one remedy; he tried another. All to no purpose; the patient died. He essayed another and another plan of treatment. Still the patients died.

"Time rolled on, and the month of June —46 brought with it a recurrence of the disease on the same farms as before, and with all its former fatality. I applied to its treatment all that the previous year's experience, and the thoughts and inquiries of the intervening twelve months had suggested; but, as usual, death in most cases closed the scene. I was, however, determined not to give up. I had observed in all the cases I examined in the summer —45, as a thing worthy of being noted, but nothing further, that there was a large quantity of earthy matter—sand, pieces of brick, tiles, leather, &c.—in the passage from the second and third to the fourth stomach; and in one case I collected and washed a portion of this foreign matter and laid it aside, thinking it of no use, however, but as a cabinet curiosity. In summer —46, I invariably met with the same appearance, and on inquiry was told that all the beasts affected had been addicted to eating bones, old shoes, rags, or whatever trash they could get hold of. In making a post-mortem examination of the last fatal case of the disease which I saw, I was struck by the appearance among the earthy matter in the stomach of small particles of a soft, white, putty-like substance, and the idea of white paint (*carbonate of lead*) immediately came into my mind. I collected and took with me a portion of this matter, and at the first convenient opportunity made an analytical examination of it; the result of which was, such a quantity of carbonate of lead as left no doubt of the cause of death, in this case at least. And on making an examination of similar matter taken from the stomachs of the previous year's cases, I found exactly the same results. Being now satisfied that I had found a solution to my two years' difficulty, I applied to the owners of the (dead) cattle for leave to exhume and examine two of them, on different farms, that had been buried without their stomachs being cut up. One of them had been eight, the other eleven weeks in the ground. I, however, managed in each case to obtain a portion of the contents of the stomach free from any admixture, and on subjecting these to analysis, had my views still further confirmed by the large quantity of lead I obtained."

For an account of "the physiological action" of the poison, which, owing to certain peculiarities in the structure and functions of the digestive organs in cattle are different in some respects from what they are in man; as well as of the "symptoms and post-mortem appearances," "treatment," and "analysis," we refer the reader to Mr. Cuming's practically interesting pamphlet.

It would not be doing the author justice, however, were we to conclude this brief notice of his work without setting forth, and in his own words, that "the claim" he rests upon is, "not that he has discovered that the salts of lead are poisonous to cattle; but that he has investigated and traced to its true origin an affection among this class of animals (cattle) of mysterious character; of general and extensive prevalence and extreme fatality, &c."

In an "Appendix," Mr. Cuming adds, he has since met with "a number of cases confirmatory of his expressed opinions;" and concludes with the following very pertinent remarks:—"Last winter a deal was written in some of the medical journals about a few poisoned partridges that somehow found their way to the London game markets. But the carcass of an ox or quey would outweigh a vast number of partridges, and it would not be difficult to tell of many such being slaughtered after being incurably poisoned, and finding their way in the shape of butcher's meat to the same city whence the poison had emanated: a curious instance, certainly, of retribution. It would be hard, however, to say that such meat was hurtful, until examination and experiment have proved it to be so; on the other hand, it would be equally unsafe to admit its being wholesome without sufficient investigation: and in treating the subject as I have done, I would have judged myself short of my duty to the public had I failed to notice this view of it Having pointed it out, it is for others more interested to carry it further, if they think fit."

Home Extracts.

The Hunterian Oration,

DELIVERED IN THE THEATRE OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND,

On Thursday, February 14, 1850,

By Frederick Carpenter Skey, *Esq.. F.R.S.*,

Lecturer on Anatomy, and Assistant-Surgeon to St. Bartholomew's Hospital.

(From "The Medical Times.")

Mr. President and Gentlemen,

We are assembled on this occasion to do honour to the genius of Hunter—a name celebrated throughout the civilised world—and also to record the merits of those who, deceased since our last anniversary, have claims on the respectful remembrance of their brethren. The period of Mr. Hunter has formed an epoch in the history of medical science. His unceasing ardour, his spirit of investigation, and his intellectual greatness, demand the homage of our veneration, and in the search of science leave competition far behind. In the range of modern physiological science, no one has approached his eminence or participated in his glory. No thought of private interest, no aspirations after fame, no ambition after distinctions, could divert his mind from the pursuit of truth and the investigation of Nature and her laws. On the almost untrodden ground of his researches his mind revelled in the luxuriance of intellectual riches. That his mind was imbued with the very spirit of earnest inquiry, his gigantic productions will testify to; that his researches were conceived and carried out by superior intelligence, I point to the philosophy of his written works. It was said of Bacon by Ben Johnson, that his words were so full of meaning, his hearers could not look aside from him without loss; and even so did Hunter's reflecting mind teem with originality of conception. He winged his way from the infancy to the mature age of science, discovering and maturing every subject that engaged his fixed attention. His intellect has been the frequent theme of eulogium in this theatre, and upon which my numerous predecessors have expatiated with eloquence. Combined with his intellect, were also certain moral qualities, which equally demand our praise, while they fortify our convictions of his claims to the gratitude and admiration of posterity. Ingenuous, disinterested, unreserved in communicating knowledge, he exhibited many of the excellencies of the true philosopher. He surveyed, as from an eminence, the great book of Nature, and his thoughts expanded by a natural elasticity as he became elevated above the grovelling influences of

the world. To a love of Nature he added a still stronger love of truth. It is impossible to read of him without believing that to the ardour and enthusiasm which incited him to toil over the great field of Nature he added an undeviating adherence to truth. A spirit of arrogance, and a disposition to depreciate the works of a rival, is the characteristic of the pretender to science, while they expose the motives which carry him forward in its pursuit. And the cause is plain; for, if animated by a true love of science, any contribution to his favourite study is hailed with gladness; whereas, it would be received by the empiric with coldness, and, perhaps, disapprobation. How often does the desire of distinction dictate our efforts and produce envy. In the great temple of knowledge there should be no contentions for place; a spirit of fraternity should prevail. Every degrading thought and passion should be thrown aside as derogatory and injurious. Between two students of Nature there are no motives for rivalship or ill-will. They are directed by one common and high motive, and have no time to step out of the direct path of inquiry to indulge angry passions or to question motives. Their eyes are fixed on one object, and, to reach this goal, they pursue their course in a straightforward direction. The excellence of Hunter is to be looked for in his untiring efforts to advance the cause of physiological science—his untiring industry—his indifference to the acquisition of riches, and in the benevolence of his nature, which ever identified itself with suffering, and which inspired feelings of love in the breasts of all his friends. [Mr. Skey here quoted an autograph letter of Mr. Hunter's, written in 1726, to the master, wardens, and court of assistants of the Corporation of Surgeons, giving evidence of his desire to extend the advantages of medical literature to all]. The Orator then proceeded to notice several of the celebrated links which connected Hunter with the medical profession, and first noticed the name of William Clift, whose name, he said, next to its great founder, was more fully identified with the Hunterian Museum than that of any other man living or dead.

Mr. Charles Aston Key was next referred to as a name identified with the highest class of scientific surgery.

Mr. Skey, after giving brief biographical notices of the late Messrs. Andrews, Morton, and Pennington, proceeded:—From the earliest period of the world, the science of medicine has been esteemed one of the noblest occupations; and it would be difficult to find one more adapted to inspire the mind with ardour, or to kindle the energies of thought. The study of physiology, whether applied to the structure of the body or to the attempt to explore the mysterious agent of life,—the study of those phenomena which characterise the local or general defects in the body,—the study of

psychology, demanding the highest order of intellect,—the discovery of agents obtained from the vegetable, animal, and mineral kingdoms,—the researches of the chemist, whose operations are connected with almost every branch of medical science,—we can hardly point to one department that is not, in a greater or less degree, necessary to the service of medicine: these are among the occupations of medical men, and they blend into the wider circles both of philosophy and science, for here there is no boundary to the scope of study. Nor are his moral requisites less indispensable. The practitioner in rural districts is a member of each social circle. To him the father resigns the health of his family; he is admitted at all times and in all seasons; and here he may exercise even a parental authority. He thus becomes an adviser and a friend, and acquires extensive rights and peculiar privileges. The path to medical knowledge, also, is dangerous, and its requirements are often repugnant to delicacy. It involves intercourse from which the senses will often revolt. Often the medical man pursues his labours, unchequered by recreation for a single day, in companionship with sorrow, disease, and death; and while his family seek the repose which nature demands, he is, perhaps, summoned to a distant village to minister to the relief of incurable disease, and devoting to reflection those hours in which he should invigorate his mind and body for the duties of the morrow. For the influence of such occupations on his health, I refer to the bills of mortality, which shew that he too often sinks into an early grave. Mr. Skey considered that this condition was altogether unmerited, and continued: With large resources, the profession of medicine is at the present time a degenerate science. The rank of a select few may yet remain; but the profession has ceased to be sustained to the level of its real value by the voice of the public. The causes for this are various; but I conceive the greatest of all to be, the *want of education.* It is mind that does the great work of the world. He who would study man in his mental and physical condition must cultivate an acquaintance with the writers of antiquity. He will take nothing upon trust, but will trace the stream of knowledge to its source. The language of ancient Rome is that of the great congress of medicine. It is the language of Celsus, and the adopted language of Haller and Boerhaave. Its cultivation is more indispensable to medicine than to any other department of science. Yet, for all this, the excessive cultivation of *classical* knowledge generates a learned folly, disqualifying its possessor for the acquisition of that knowledge which is necessary for our intercourse with the world. No man is fitted for the task of education whose mind is not stored with *general* knowledge. Another important branch of study is that of the *exact sciences.* It is thus

that we learn to compare and analyse, and then to expose the fallacies under which false reasoning lurks. Logic is also an important source of discipline, invigorating the faculties by its application both to the right interpretation of terms, and to the higher purposes of abstract reasoning. To the neglect of these it was to be attributed, that the science of medicine was degraded; and the Orator considered, that unless some measures were adopted by our colleges, requiring education in these branches as necessary for qualification, the entire removal of all other causes combined would fail to remedy the evils existing. Mr. Skey then observed, with much point and some severity, upon the prevalent system of education, so called, by means of apprenticeship, exhausting, as he said, four or more invaluable years of the early life of the student. After characterising and somewhat satirising this system, to which, he observed, the profession had lent itself, in opposition to the laws of moral right and of common sense, he said: This (the age of his apprenticeship) is the spring of his existence, and the only season in which the mind takes impressions for a whole life. The child is said to be "father to the man." I have sketched his education, look at the result. The giant evil of the day was a want of education, while all should be educated in mind and manners up to the level of good society; and he rejoiced to think that the Council of the College had acknowledged the necessity by taking the initiative here, by instituting examinations in classical and mathematical knowledge from all junior candidates for the rank of Fellow.

Another cause of the degradation before-mentioned was founded on the degenerate standard of medical ethics. Taking the body corporate of the profession, we find a want of that high tone which distinguishes other professions. There is no profession the conventional refinements of which are more stringent than in the higher departments of the law; that being a purely artificial pursuit. In the abstract, law is an inflexible and impartial principle, devised by sages to protect society against selfishness and power, and no principle is more deserving the veneration of the world; while, by the progress of knowledge and civilization, medicine, having enlarged the circle of its utility, has become degenerate in rank; that law has gained an ascendancy in proportion as it has lost its early simplicity. The instrument has become a machine, ponderous and unwieldy, and has ceased to be the tribunal of impartial justice; and in the same degree have the conventional laws of its professors, their learning and education, obtained an ascendancy in the world immeasurably superior to those of medicine; the estimate of truth receding in value in proportion as the world advances in civilisation. The profession of the law at the present day exhibits as great a prostitution of intellect as was ever imposed

on the human understanding; and it is impossible for the mind, imbued with a love of truth, to witness the mock display of gladiatorial talent shewn in our courts of law without regretting that there the highest intellectual powers are enlisted in the cause of moral degradation, and either indulge a smile of contempt or shed a tear with the philosopher of Ephesus over the vices of a redundant civilization. It is matter for rejoicing, that the mind and the habits of the medical man are differently constituted—with truth as his field of action, good his aim, and the world his study. The duties of the profession of medicine have a tendency to keep alive the best emotions and a warm sympathy with the sufferings of humanity. Still the practice of the law is regulated by a sense of decorum, and even of refinement, which, in a far less degree, are practised by the medical profession.

In the next place, *the state of the law* has an important influence in depressing the rank of the profession of medicine. On this point Mr. Skey remarked, that the general practitioner was an amphibious link between a profession and a trade, and, in its exercise, the law awards him a tardy and, perhaps, questionable remuneration; a system fraught with the greatest evils both to the profession and to society. The law awarding payment for physic only, the doctor disposes of as large a quantity as is consistent with the capabilities of his patient. The question is, how much of this physic will repay the daily loss of time of the medical man; while, in many cases, it is difficult for him to be remunerated but by actual dishonesty. If the law does not award legitimate compensation, he is driven to an excuse for subjecting his patient to a course of physic, with a view to prevent the recurrence of the malady. The objections to all this cannot be overcharged. It is inseparably interwoven with the rank of our profession, our characters, and the well-being of society. It upholds the doctrine, that medicine is the great antidote against disease—inviting empiricism, and weakening the allegiance of our profession to Nature, as the author of disease and the worker of its treatment: we thus forget the operation of first causes in our reliance on second, and strike a fatal blow at the rank and respectability of our profession. The placing a pecuniary value on the drugs dispensed is a feature most injurious to the rank of a general practitioner, and with quite as much reason might the surgeon claim compensation in the name of the instruments he uses. Medicines should not be dispensed at their adventitious value. The whole profession should cry aloud and repudiate a practice so derogatory and vicious, and obtain from the legislature a title to remuneration more consistent with their services and their high calling. Mr. Skey next observed upon the ambition to acquire rank as an incentive to attaining superiority of mind; but it was a

stimulus, he said, far less available, on many grounds, to the professors of medicine, than to any of the other professions. He would lay claim for eminent superiority, and for some order of merit to be granted by government to such as distinguished themselves in medical science.

In the removal of professional evils, society would not render aid, unless the profession itself rooted them out—purging themselves of the imputation of littleness, and throwing themselves on the highest resources of their art. Pointing to the grandest discoveries in general science, or to the deductions of the profoundest philosophers and mathematicians, Mr. Skey said, that in the limited circle of our own profession we may boast names and discoveries not inferior, and which greatly exceed them, in their intrinsic value, if guaged by their subserviency to the happiness of mankind; and in justification of this statement the speaker noticed in succession many points in which the study of medicine had proved, in the hands of some of its ornaments, the handmaid to health and happiness; discoveries worthy of any age or any science, and benefiting alike the peasant and the king. In considering the remuneration of our profession he did not lose sight of the fact, that the necessities of society increase in proportion to its inability to compensate us; that poverty is the very nursery of disease; and that, in hospitals, dispensaries, or in unions, a large portion of our time is devoted to the relief of human suffering. We may justly boast of our noble hospitals and infirmaries, erected by the benevolence of private individuals. The practice of charity is stamped upon the national character. In the hospitals of the metropolis about 300,000 persons annually obtain relief from suffering. But what would these endowments be but for the active agency of our profession? The medical mind infuses a spirit of life into the otherwise inanimate body, and is thus the instrument of incalculable good to thousands—the pride of virtue, and the boast of the world. Without doubt, the motives dictating these services are composite in their nature; still, the world is our debtor, and we feel that we have some claim for an honorary distinction. The sovereign encircles the warrior's brow with the victorious wreath; his bruised arms are hung up as monuments of glory; and it is perhaps natural that the professors of medicine, devoted to the purpose of extending human existence, should pass unrewarded; while it is almost singular that this fact should escape the propounder of the Malthusian doctrine.

In alluding to the impracticability of extending the advantages of education to the present generation of practitioners, Mr. Skey said:—Thus far the evil is irremediable; but much good may be effected by the agency of a refining spirit, employed for

the purpose of rooting out the vulgarisms in conduct that unhappily prevail in our profession. A better spirit should be infused into our vocation; one which will tend to avert those evils of conduct between man and man, founded on questions of mere profit and loss. To this end he would suggest the cultivation of a more refined taste—the power of appreciating beauty in any form. Good taste and good feeling are found in daily companionship; while, without it, a blank is left in the circle of man's enjoyments, and his intellectual framework is incomplete. The study of the beautiful forms one of the most elegant resources of our minds: it embraces a wide range of human knowledge, from its primitive form to the highest manifestations of refined and cultivated taste in the poet or the painter. Such objects are within the range of every man's observation. A country life especially furnishes materials for the development of thought; while objects of beauty are calculated to take men out of the sphere of personal occupation, and to direct their thoughts to objects which tend to calm and elevate the mind. Who can behold (said the speaker) the gorgeous drapery of a golden sunset, or the variegated colours decomposed by the common prism, without pleasure? Who can be indifferent to the delicate tracery of masses of ferns, of heaths, or to the grandeur of the sturdy oak, the graceful sweep of the willow, or the light pencilling of the ash—the undulations of distant hills, or the more sublime form of ponderous clouds against the blue sky, or, as they may be, fringed with light reflected from the sun—or the broad expanse of the boundless ocean?—The relish for such enjoyment has a tendency to adorn the acquisitions of the student, and he may be said to breathe a new existence in the novel associations of every day and hour. The aptitude for such studies is possessed in various degrees of perfection by different individuals; but the germ is in all, and, by early cultivation, it may be made to perceive and enjoy the highest artistic powers, from the simple beauty of an arabesque to the sublimity of genius exhibited in the Theseus, and other adornments of the great temple of Athens. The study of the sublimity of art must always exercise a refining influence over the character; and that man was to be pitied who could see unmoved the marbles of Nineveh without attaching to them a sacred character, forming, as they do, the great link of evidence of the biblical history of a former world. A man's taste for what is elegant, and his right moral conduct, are one and the same sense, operating on the same subject—a love of beauty and propriety, extended to all intellectual exhibitions. What (said Mr. Skey, in conclusion) are the requisites of your profession? Tested by the claims of other professions, could it be said that our duties demand a lower standard of moral excellence? are we content with mediocrity? or, rather, does any

pursuit demand a higher order of intellect, a deeper fund of moral courage, a greater boldness in action? The medical man is, under Providence, the arbiter of human life. "Ars corporis curandi tuendique, atque utilitas Deorum immortalium, inventioni est consecrata." A pursuit which, in its very infancy, was esteemed so great as to claim descent from the gods, and is so interwoven with the welfare of every member of society, and on which even our national character depends, and no less our scientific rank, merits the highest attention of the legislature, and demands for it the most vigilant observance and exposition of its defects, and the co-operation of all who desire to promote the welfare of this great nation throughout the globe.

On the Management of the Farm Horse.

By W. C. Spooner.

(Continued from page 112.)

3. *Keeping, whether in the Stable or in the open Air.*

During eight months in the year, viz. from October to June, there can scarcely be a doubt that it is far more desirable, in every respect, to keep working-horses in the stable.

The effect of exposure to *cold* and *wet* throughout this period of the year is indeed tantamount to *the waste of so many quarters of oats:* for, if the animal heat is permitted to be thus purloined by means of exposure, an additional quantity of fuel, in the form of food, is necessary to supply this deprivation; for there is no fact in animal chemistry better established than this,—that the principal use of the non-nitrogenized or carbonaceous part of food, is to furnish a supply of carbon, which, uniting with the oxygen of the atmosphere in the lungs, gives out heat, as in ordinary combustion, and thus serves to keep the animal temperature above that of surrounding objects. It is, therefore, a very *costly* method of procuring a certain amount of animal heat, when such heat, or a good portion of it, can be retained by keeping an animal in a *comfortable* stable. Besides which, the effect of turning a horse into the open air is to cause him to have a long thick coat, this being one of Nature's resources to counteract the effect of cold. When a horse is worked with such an external covering, he sweats readily and profusely in consequence, and is faint and weak after very little exertion. Thus, in whatever way we look at the question, whether theoretically or practically, "turning out" is decidedly objectionable in every respect. With regard, however,

to the turning of our horses out during the three or four warmest months of the year, many of the foregoing objections do not apply. For my own part, I have been in the habit, after the warm weather has thoroughly set in, and the hay has been made and carried from the pastures, to turn out my cart-horses during the night, and I have never seen other than benefit arising from the practice.

Its advantages are, that much litter has been thereby saved, as well as considerable labour in carting green food or hay to the stable. The coolness of the pastures during the night, as compared to the heated stables, is very conducive to health; and, indeed, I have generally found that the horses have gained flesh during this period.

One of the principal objections to this practice is, that the dung is likely to be dissipated and lost. This, however, may readily be avoided by employing a lad with a wheelbarrow and shovel, to collect the droppings from time to time into a heap, to be afterwards mixed with ashes or earth, to be laid out in the pasture at a more suitable period of the year This mode should also be followed with regard to the dung of cattle; the expense is trivial, and is far more than compensated by the advantages that attend the saving of the herbage from the too powerful action of the dung, and its more economical use when collected together.

Another objection to the practice is, that horses are more likely to get kicked or otherwise injured by being thus turned out. This certainly is of some weight, and is only to be obviated in a measure by abstaining from turning out those horses that are at all viciously disposed.

The practice of turning out during the nights of summer applies only to those farms where there are abundant pastures, and, consequently, where the after-grass abounds.

In farms where pastures are deficient, the horse may be turned into yards, and supplied with green food to equal advantage. When the nights get cold, and before the moulting season, the horses should no longer be turned out at night, but the change may be rendered gradual by letting them out a couple of hours in the afternoon after the day's work is over, and also on Sundays during the day, if the weather is fine.

So far, and so far only, I believe, the practice of turning out working horses is consistent with reason.

4. *Feeding in different Seasons.*

We now approach the most important part of our subject, viz., "feeding in different seasons;" for the expense of keeping the horse-power on a farm is very great, and forms a very considerable

proportion of the annual expense of the farm, so much so, indeed, that it is worthy of the utmost consideration whether some saving cannot be effected in this large item of expenditure. It should be borne in mind, however, that there are two methods of effecting or endeavouring to effect this saving: one, the lessening the quantity or quality of the food, the other, the *retaining the quantity of food*, but *reducing the number of horses*. Now, I must freely confess that I incline towards the latter method of lessening these expenses, and I do not sympathize with the advocates of the starvation principle. Many writers in magazines and other works have laboured very ingeniously to shew how very *cheaply* horses can be kept; one contends that a liberal supply of carrots* is alone sufficient without any other food; another, that abundance of straw and a mere taste of corn is enough; after the precedent, no doubt, of those retailers of food who, in the dark alleys of the metropolis, vociferously proclaim their "ha-porth of peas, and a suck at the bacon for nothing," or the still more scientific discoverer, who found a mode of keeping his horse upon sawdust, though, unfortunately, the animal died just as his plan was reaching perfection.

I have before observed, that the number of horses kept on a farm must be regulated by the requirements of the seed seasons. If eight or ten horses are enough at these periods, they are surely enough for the other portions of the year. It is, of course, an object to take every advantage of fine weather to make both men and horses move nimbly, working at this period of the year both early and late. To accomplish these desirable purposes it is essential that the men should be *well paid* and the horses *well fed;* an extra allowance in the wages of the former for his overtime will be money exceedingly well laid out, and not only is it essential that the horses should have an additional allowance of corn during this period, but their *condition* should be such that they be capable of undergoing extra exertion without injury or fatigue. If they are half-starved throughout the winter, they can hardly be expected to bustle through the barley and turnip sowing as they ought; and if grass is their only diet through the summer, how can they be

* Although, according in the writer's objection to the "starvation system," and being quite satisfied, from long experience, that *good work* can only be obtained by *good feeding*, yet I cannot avoid mentioning that, when residing during the last year at Boulogne, I frequently visited the farm of a Norfolk gentleman, who there held a couple of hundred acres of turnip-land, cultivated as cleanly as if it were in England, and that he fed his cart-horses, during the entire winter, solely on carrots, chaff of clover, and straw, without any portion of oats or beans. The cattle were of the ordinary Norman breed—something like the Suffolk-Punch—ploughing, in pairs, full an acre a day from the stubble, and were in excellent working condition.—F. Burke.

expected to perform their work freely through the autumnal wheat sowing?

Another advantage arising from keeping horses in good condition is, that *two* horses *well* fed will do the labour of *three* horses *badly* kept, so that two in a plough will be sufficient during the busy seasons. At a period like the present, when British agriculture has so many difficulties to encounter and a foreign competition to meet, it is of the utmost importance to ascertain and to adopt the most economical practices; but not to be drawn into error by misplaced or *false* economy, nor to be wedded to customs whose antiquity is their only merit. If we seek for illustrations in the human subject for the desirableness of liberal feeding, we have not far to go for abundant illustrations. What class of men can do more work in a given time, or do it more economically, than the navigators on our railways, and no class of men live on more nutritious food? The analogy obtains likewise amongst railway horses with equal force. A few months since the writer was travelling on a newly opened railway in the same carriage with one of the contractors that had been engaged in its completion. He was one of the order of sub-contractors, whose profits can only be obtained by adopting every mechanical contrivance calculated to save labour, and, in fact, by getting both manual and horse labour effected at as low a rate as possible. I entered into conversation with my companion by remarking that he must have felt severely the high price of oats and beans which ruled throughout the first six months of 1847, and I asked him if he reduced the allowance of corn for his horses in consequence; he replied that he had been sorely punished by this extravagant price, which was one-third higher than it was when he took his contract; but notwithstanding this he gave the same amount of food to his horses, which indeed was almost unlimited, averaging *three bushels of oats and half a bushel of beans* each horse per week, and the best hay *ad libitum*. I asked him if he was quite sure that he could not reduce the amount of corn with advantage, even if he worked the horses more moderately in consequence: he rejoined, that he had tried this plan, though not latterly, and was convinced that the system he adopted was the cheapest in the end; his horses worked hard, and for twelve hours in a summer's day, and it was only by having as much corn as they chose to eat that they could do this. Now, this is important evidence in favour of liberal feeding; for it is not the practice of one individual only, but of hundreds, who are obliged to study economy to the utmost in their arrangements. How strong is the contrast between the strength of such horses and that of many farmers, whose teams of four horses in a plough are often to be seen on ordinary or even

on light land, moving at the rate of two miles an hour through a day of eight hours' duration. In the keep of these horses, grass in the summer and straw in the winter form the bulk of their food, assisted, perhaps, by a bushel or two of oats per week during half the year. In consequence of this low feeding their stamina is low, they are always under *par*, and are incapable of doing a hard day's work. Though their bellies are large and distended, their ribs are plainly to be seen, and their actual weight from deficiency of muscle is not more than two-thirds what it ought to be. Now, I do not mean to assert that farmers' horses ought to be fed so high as railroad horses; their work is different, and they are kept under different circumstances; their food should, therefore, be regulated accordingly, avoiding alike the two extremes of too high and too low feeding. The circumstances in which they differ from contractors' horses are these:—they are required to be kept all the year round, their work varying according to the season; their provender being raised on the farm, and not purchased, must depend very much upon the season, being also often very indifferent as regards its quality, whilst at the same time being unsaleable, the damaged provender must be consumed at home; then, again, the litter which the contractor is obliged to purchase costs the farmer nothing, being compensated for by the dung. There is not, therefore, the same necessity for getting out of each horse the utmost amount of work; but he may well be expected to observe the *juste milieu*, keeping his horses in such condition throughout the year as will enable him without injury to exact some extra labour during the busy periods.

Taking it for granted that this is desirable, I proceed to consider the description of food, with its quantity and quality, necessary for this purpose; and here I must observe that food must certainly be regulated by the description of farm, for in some instances pasture or water-meadow hay is very abundant, and in other cases very scarce. In some the amount of straw is enormous, in other cases by no means considerable, being no more than sufficient for the cows or young stock. However much the quantity and quality of hay and straw may vary, it may be asked, Have we any substitute that will supply the place of oats? To this I unhesitatingly answer, No! In this country, if a horse is to be kept in working condition, he must have a certain amount of concentrated food, and no form is more suitable for the stomach or more conducive to health than that of oats. To establish this position, let us consider for a few minutes the construction as well as the functions of the stomach of the horse as compared with the ox, an animal that is capable of subsisting readily on a large amount of unnutritious food.

The stomach of the horse is comparatively small, holding about three gallons, whilst the ox possesses no less than four stomachs, the *first* of which is considerably *larger* than that of the horse. This difference shews, what indeed the habits of these animals also demonstrate, that whilst the ox is so constructed as to consume a *large* quantity of food *at a meal*, the horse, on the other, is adapted to consume a *moderate* quantity, and *often*. If such a mass of food as is often found in the maw of the ox were contained in the stomach of the horse, it would be impossible for this animal to perform those exertions he is often called upon to accomplish; for the loaded stomach presses against the midriff or diaphragm, the muscle of respiration, and would thus materially retard or prevent its action. The internal surface of the stomach of the horse is worthy of particular notice. One half, or that nearest the cardiac orifice, as the entry to the stomach is termed, is lined by a white coat called the cuticular, from its being comparatively insensible, like the cuticle or outer skin; and the other half has a reddish coloured coat, called the villous, which is not only sensible, but secretes the gastric juice, by which the food is converted into *chyme*. This chymification, as the first act of digestion is termed, is thus accomplished by means of the acid of the gastric juice; and *small* as the stomach is, yet only *one-half* is really devoted to the process of digestion, the other moiety acting as a reservoir for the food. Now, it is a well-known fact, that in proportion to the exertions of an animal is the expenditure of the muscular system, and the consequent necessity for an equivalent supply of nutriment.

If, therefore, bearing this in mind, we consider the smallness of the stomach of the horse, it seems evident that he was intended by nature to consume concentrated food, such as grain, and the formation of the molar teeth strongly corroborates this view of the matter. These molar teeth, or grinders, as they are commonly and very expressively termed, are broader and less cutting than those of the ox, but decidedly better adapted for grinding corn, as in a mill; for the teeth of the upper and lower jaws do not exactly correspond, but the teeth of the latter are narrower as well as the jaw itself; so that the lower jaw is moved from side to side, and the grain is thus triturated and ground, as between two millstones.

With this information on the structure of the masticatory and digestive apparatus of the horse, it is impossible to arrive at the conclusion that such poor and bulky food as straw or roots is a wholesome and nutritious diet for working horses. It is, indeed, as unwholesome and unnutritious *as it is for man to live entirely on potatoes*. With such food, neither the quadruped nor the biped is capable of doing a fair day's work without great exhaustion.

Food, it is well known, consists of two kinds, one carboniferous and devoid of nitrogen, whose use it is to keep up the animal warmth; the other kind possessing nitrogen, and thus supplying the muscular system with the requisite nourishment. The usual forms of the latter are albumen and gluten; those of the former, starch and sugar. It is essential, therefore, that the food of the horse should contain both these classes of elements: unless the nitrogenized elements are supplied, the expenditure of muscular vigour cannot be replaced; and unless the carboniferous portion is furnished, there will not be sufficient fuel to keep up the animal temperature. We must, therefore, endeavour to ascertain how far the various articles of horse provender supply the essential ingredients required by the system.

According to Professor Johnston and other of our best authorities on the subject, the following table will represent the nutritive qualities of the various articles used for horse food :—

	Water.	Husk, or Woody Fibre.	Starch, Gum, and Sugar.	Gluten, Albumen, &c.	Fatty Matter.	Saline Matter.
Oats	16	20	45	11	6	2·5
Beans	14	8 to 11	40	26	2·5	3
Peas	14	9	50	24	2·1	3
Indian corn . . .	14	6	70	12	5 to 9	1·5
Barley	15	14	52	13·5	2 to 3	3
Meadow hay . . .	14	30	40	7·1	2 to 5	5 to 10
Clover hay . . .	14	25	40	9·3	3 to 5	9
Pea straw . . .	10 to 15	25	45	12·3	1·5	4 to 6
Oat straw . . .	12	45	35	1·3	0·8	6
Barley straw . .	12 to 15	50	30	1·3	..	5
Carrots	85	3	10	1·5	0·4	1½ to 2
Swedes	80	3	14	2	·3	5
Linseed	9·2	8 to 9	35·3	20·3	20·	6·3
Bran	13·1	53·6	2	19·3	4·7	7·3

From this table it will be perceived that the nutritious part of food consists of three portions, the nitrogenized or flesh making elements—the fat—and the gum, sugar, and starch. In estimating the relative value of horse food, I propose to consider separately the value of each of these kinds, and in so doing to take clover-hay for our standard of comparison :—

Clover-hay, then, contains of starch, gum, and sugar, 40 lbs.
„ „ fat . . . . 4 „
„ „ albumen, &c. . . 9 „

Making of nutritious elements 53 parts in 100

If we value these 53 lbs. of nutriment at 1*d.* each, we still find that it will bring the value of the hay to 4*s.* 5*d.* per 100 lbs., or about £5 per ton, which is pretty nearly the truth for the best hay. It does not, however, seem fair that the starch, &c. should be valued so high as albumen, as, if we seek for a larger proportion of the latter in any food, we are obliged to pay a higher price for it: I shall therefore assume that the value of albumen, &c. is 50 per cent. higher than that of starch; and as fat is also a somewhat rare and costly product and of much value in food, I shall place that at the same rate as albumen; so that, estimating it in this way, we bring the value of the hay to £5 12*s.* 6*d.* per ton; or, if this is thought too high, we can reduce the value of the starch one-eighth, which will bring back the price of the hay to about £5 per ton. It will be fairer, however, to take £5 12*s.* 6*d.* per ton as the value of such hay, for I am inclined to think that the nutritive contents of hay, as compared with other food, have been somewhat overrated. It must be borne in mind that the amount of nourishment *extracted* from hay varies extremely with the digestive powers of the horse; for whilst some with great digestive powers will extract the greater part of the nutriment, in others with weaker capabilities not more than *one-half* will be assimilated. All herbivorous animals, however, require a tolerable amount of bulk in their food, so as to *distend* the stomach and bowels to a certain degree by which the digestive processes are properly carried on, so that whilst a horse can not only exist but perform a moderate amount of work with hay only, he could not do so if kept entirely on oats and beans. If a horse is required to be kept in idleness, it is no doubt cheaper to feed him on hay alone, for he will be able to eat a sufficient quantity, so as to extract from it the requisite amount of nutriment. When, however, he is called upon to work, he requires at least double or treble the proportion of the muscle-making elements of food; to obtain which, if hay were his only diet, he would require far more than the power of his digestive organs would dispose of, besides which such a mass of food would produce such mechanical pressure on the chest as to obstruct respiration, and would also demand a much greater amount of nervous energy to be devoted to the functions of digestion than he would be able to supply; for the less concentrated the food, the greater the demand on the digestive functions. When labour, therefore, is required, we must have recourse to more concentrated food, though we shall have to purchase it at a dearer rate. The food principally used for this purpose in this country, and which appears to agree best with the constitution of the horse, is oats.

If we refer to the analysis of oats, we find that in 100 parts there are contained of—

Starch, &c. . .	46 lbs.
Fat . . .	5 „
Albumen, &c. . .	11 „

We may consider the value of oats to be about 3*s.* per bushel weighing 37 lbs., or 3*s.*.4*d.* per bushel if of 40 lbs. weight, which will bring the cost of 100 lbs. to nearly 8*s.*: now, if we value the constituents at the same ratio as in hay, we find—

			s.	*d.*
Starch, &c.	46 lbs. at 1*d.* per lb. . .		3	10
Fat . . .	5 „ } 16 lbs. at 1½*d.* per lb.		2	0
Albumen, &c.	11 „ }			
			5	10
Which sum will be insufficient; if however we add one-third			1	11
We have			7	9

Or nearly sufficient; so that it appears that the nutriment contained in oats is one-third dearer than that in hay; to compensate for which extra expense the food is more concentrated, easier of digestion, and its nutritious properties consequently likely to be *more perfectly extracted.*

Again, with regard to beans, we find that 100 parts contain of

			s.	*d.*
Starch, &c.	40 lbs., which at 1*d.* will amount to		3	4
Fat, &c.	2½ „ } 28½ lbs. at 1½*d.* do. .		3	6¾
Albumen, &c.	26 „ }			
Together amounting to			6	11¾
It will therefore be necessary to add one-fourth .			1	8¾
Which makes			8	8½
For we find that one bushel of beans, weighing 64 lbs., is worth, on the average at 44*s.* per qr.			5	6
Half a bushel more, or 32 lbs. . . .			2	9
The odd 4 lbs.			0	4
Making altogether			8	7

for 100 lbs. of beans; so that it appears that though the nutriment contained in beans is one-fourth more than that contained in hay, yet, when the flesh-making constituents are required, it is a somewhat cheaper source than oats, and still more concentrated. If, however, beans are given very freely, they have a very heating or stimulating effect: the blood abounds too much with fibrine, and inflammatory swellings of the limbs and the absorbent vessels occur; so that beans require to be given with moderation and caution, and are principally of service when horses are severely worked, in which case they are given with advantage in combination with oats, and in the proportion of one-third or one-half the weight in beans. When oats are very dear and beans are moderate in price, there is, of course, a disposition to substitute the one for the other, and it is thought that if combined with bran their injurious effects may be obviated. This, however, is the case only to a certain extent: beans are very astringent in their nature, whilst bran, from its mechanical effects, is relaxing, and so far these substances supply each other's deficiencies; also with regard to fat, with which bran abounds and beans are deficient. In other respects beans and bran closely resemble each other, both abounding with albuminous elements; whilst beans, as compared with oats, are deficient in starch, &c., and in bran scarcely any exists, so that these two substances are not capable of supplying each other's deficiencies. The writer experienced this fact during the last year, when, in consequence of the excessive price of oats, he endeavoured to substitute a bushel of beans and a bushel of bran for two bushels of oats, but it was soon found that the horses did not do so well on this diet.

With regard to the use of roots as food for horses, there is only one that can with any advantage be employed, viz., carrots; for we find that horses altogether refuse mangold-wurzel and common turnips, and will eat only a very moderate quantity of swedes. I am inclined to think, however, that the merits of carrots have been greatly overrated when they have been sold at such prices as 40*s.* to 50*s.* per ton for the purpose of feeding horses. Let us endeavour to see, however, whether carrots are adapted to supply the place of oats and beans. We may, I think, consider that an average-sized cart-horse will require daily, when moderately worked, between 16 and 17 lbs. of the best hay,—

	Starch, &c.	Fat.	Albumen, &c.
Best hay, between 16 and 17 lbs., containing	6·66	·66	1·5
Oats 10 lbs.	4· 6	· 5	1·1
Making together	11·26	1·16	2·6

So that, to obtain each of these ingredients respectively, it would be necessary for the horse to eat daily—

Carrots to supply albumen . . .	174 lbs.
Ditto the fat	300 „
Ditto the starch, &c.	111 „
	3)585 „
Or, taking the average of the whole, .	195 „

A quantity much too great for the stomach of the horse, and injurious likewise, from containing no less than *eighteen gallons of water*.

Horses have certainly been kept principally on carrots and straw, but their work has generally been slight and on light sandy land, where perhaps two-thirds of the horse power in good condition would have done equally well.

Carrots, however, when grown on a farm can be advantageously used in combination with other food, if given in such proportion that the quantity of water contained in them shall not prove injurious; and the three principal constituents shall be combined in the proportion we have previously stated, as constituting healthy feeding with oats and hay. A working-horse requires, as we have seen—

	d.
Oats 10 lbs., costing . . .	9·6
Clover hay 16½ lbs., costing . .	8·6
Amounting together per diem . .	18·2

Or 10*s*..7½*d*. per week; which supplies, as we have seen—

Starch, &c.	Fat.	Albumen.
11·26	1·16	2·6

Now, by giving the following articles of food we shall be able to supply the same amount and description of nourishment:—

			d.		Starch, &c.	Fat.	Albumen.
Oats	5 lbs.	costing	4· 8;	yielding	2·3 lbs.	· 25	· 55
Hay	3½ „	„	1·75	„	1·4 „	· 14	·329
Bran	2½ „	„	1·25	„	—	·117	·482
Carrots,	84 „	„	9·	„	8·	· 32	1·2
			16·80		11·7	·845	2·561
			7				
			12)117·60				

Or 9*s*..9½*d*. per week; being a saving of 10*d*. per horse per week.

In the above calculation I have valued the carrots at 20*s*. per ton, which price, I think, is high enough, when we consider the

large weight that can be grown of them. It will be seen, however, that while it will answer the farmer's purpose to consume them himself at such a price, yet, when he can sell them for upwards of 25*s.* per ton, it is more profitable to do so, and feed his horses on other food. It is a bad plan to give horses a few carrots only, or merely for a short time, as, being very partial to these roots, they are apt to refuse other food.

I have before observed that horses will generally eat very few swedes, but they differ in their tastes in this respect. They may, however, be allowed to eat what quantity they choose, as, being at least equal to carrots with regard to nutriment, swedes are decidedly an economical diet.

Linseed has been proposed as economical feeding for horses, and in a few instances it has been tried. Linseed at £11..13*s*..4*d*. per ton is just 1¼*d*. per lb., or about one-fifth dearer than oats. Estimating it in the same ratio as hay, we find that 100 lbs. contain of—

			d.		*s.*	*d.*
Albumen, &c.	20 lbs.,	which at	1½	per lb. makes	2	6
Fat, &c.	20 „	„	1½	„	2	6
Starch, &c.	36 „	„	1	„	3	0
Making for 100 lbs. of linseed . . .					8	0
Now if to this we add one-fourth, as in the case of beans					2	0
We have					10	0

Which is very near 10*s*..5*d*., the cost of 100 lbs. of linseed at 1¼*d*. per lb.

It thus appears that linseed is somewhat dearer feeding than beans, a difference, however, which may readily be met by the superior value of the manure made from linseed. However valuable the large per centage of oil may be for fattening purposes, it is doubtful whether this oil is equal in value to albumen for a horse in work; and if not, beans must have the preference. The peculiar value of linseed is, however, to assist other nutritious food, such as straw, and thus, by being made into a jelly and poured over and mixed with the straw when cut into chaff, to render it not only more palatable, but more nutritious and better adapted for the animal, so that, when hay is dear or scarce, the use of linseed is exceedingly desirable. So likewise when hay has been deteriorated from being made in unfavourable weather, the addition of linseed jelly makes it both palatable and nutritious.

The value of barley-straw, estimating it at the same ratio as clover, may be put down at £2..13*s*..4*d*. per ton for feeding horses.

As, however, it is, in proportion to the nutriment contained, considerably more bulky than hay, and therefore involves more muscular exertion and a greater effort of the digestive organs, it will be proper to estimate it as much lower, as we value hay lower than corn in proportion to the nourishment contained. Accordingly we must estimate it at only 40*s.* per ton, unless indeed it contains a tolerable quantity of clover, which raises its value in proportion to the clover contained. Peas-haulm is exceedingly nutritious, and when well made is nearly as valuable as hay, for which therefore it may be readily substituted.

Young gorse is also a profitable food for horses, and, when bruised in a proper machine, is very nutritious and palatable.

THE VETERINARIAN, MARCH 1, 1850.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

THE unusual length of Mr. Gloag's paper, together with the introduction of the Hunterian Oration, has for this month shut out from our pages our Editorial article on discrepancy of professional opinion, our jurisprudence, foreign extracts, &c.

Considering that the third and concluding portion of Mr. Gloag's experiments made its appearance so far back as July last, we cannot compliment the members of our profession on the interest they have taken in a subject of such acknowledged import, and, one would think, of so much concern to them, as the expansion of the horse's foot. What! shall one of our body come forward in the year 1849, and tell us we have been for a century labouring under a heavy delusion in supposing there is any expansion of the quarters and heels of the hoof, or any descent of the horny sole? And that any "systems" or modes or methods of shoeing founded upon such theories, however plausible they appear to our minds, and however well they may have worked in practice, are in reality edifices built up of cards, founded on sand, mere chimeras of the imagination? Will not the shades of Lafosse, James Clarke, Osmer, St. Bel, Moorcroft, Coleman, and Goodwin, at hearing such opinions propounded, once more revisit

us in their mortal coil to put down such audacities? Will not Bracey Clark again buckle on his armour once more to enter the lists as the champion of expansion; or will he simply lift up his head in his easy chair, and exclaim, out of pity for a man to all appearances so beside himself—"alas! poor Gloag?" Surely, judgment in such a case will not be let "go by default!" Surely there still are left those of the profession who will stand up for their own, if not for their veterinary ancestors' cherished theories, by the side of Mr. Reeve? We could hardly imagine a more sensitive chord could have been touched to arouse the members of the veterinary body than that of the *expansion of the foot;* and yet, as Mr. Gloag with great truth says, "a wonderful apathy" has been manifested on a subject "which one would naturally consider to be of great importance." To say the least about the matter, as it stands, the dogma of "expansion" has certainly sustained a shake; but whether that be likely to affect its foundation or not remains to be shewn. That there are those of the profession who have received their professional births since the days of Coleman, and who, unlike ourselves, think differently from what Coleman did on the subject, we have reason enough to know for certain; and therefore is it the more urgently called for from the old school, that they should come forward and shew reason for maintaining their position. One thing we can venture to assure them of—and that is, that in the present condition of affairs nothing is likely to pass current save *the result of actual experiment.* Authority and precedent seem now condemned to go for nothing.

In reference to Mr. Steevens' inquiry concerning his case of "Influenza" with its somewhat uncommon "sequels," it is our intention, at no very distant period, to enter into some investigation touching that comparatively modern and most comprehensive class of diseases yclept *Influenza.* At certain seasons of the year—during spring and fall in particular—almost all the sickness we have to treat comes before us in the form of *Influenza.* Certainly, all the cases do not pursue similar courses, go through the same stages, or have like terminations. Still, there exists that general resemblance between them, especially in their nascent stage, that betokens they all belong to one order or genus of disease. And

ought so large, so comprehensive, and, we might on occasions add, so fatal, a class to pass without reflection—since they evidently do not pass without observation—from us? It is in a case like this that French veterinary medicine is superior to English. They suffer no disease or class of diseases to escape record, with full and entire description; we are but too apt to look to *treatment* alone: thinking if we can accomplish that to our minds it is enough. This however, though it turn out now and then successful, is not the road that leads to the scientific practice of medicine, but to empiricism. We are, while we follow it, in no better situation than the farrier or groom, who has found this to "cure" that, and that to "cure" this, without knowing or caring for why or for wherefore.

Rhesus' graphic narrative of the case of his old breeding mare, "non-professional" though the hand be that penned it, is, all through, a sketch so proximate to nature, that none of our professional brethren will peruse it without pronouncing its author to be both a lover and a keen observer of horseflesh. The history commences from the moment the mare came into his possession; and as it proceeds notes down every circumstance directly or indirectly connected with the final catastrophe. Close and intelligent observation has evidently kept its eye upon the patient from day to day, and month to month; and nothing has escaped remark that could anywise tend to elucidate her medical history. This is the way we would have all cases—all cases, at least of importance from their rarity or mystery—treated upon paper. The medical writer is too apt to commence his record of a case abruptly, with detailing the symptoms of the disease, without any preface or history, so far as it can be picked up; and this is apt to leave an unpleasant gap, or *desideratum*, to be filled up in the account. In cases of lameness, in particular, some biography of the lame animal—if so we may call it—is very acceptable, as throwing light, not on the nature of the case only, but on the treatment proper or advisable to be pursued as well. But our printer warns us, we must "hold hard!" When we commenced this article we had it in mind to make an observation or two on "rupture of the spleen." We find, however, we have arrived at the length of our tether.

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ON THE CONFORMATION OF HORSES, WITH REFERENCE TO THEIR FEET, AND TO SHOEING.

By J. T. HODGSON, *V.S.*

THIS subject has not, I think, received the attention from veterinarians which its importance demands. With a view of inducing a fuller consideration of it, and shewing the necessity of its study, I have written the following pages, intended principally for the student of veterinary medicine. My mind has been long directed to the subject of "the horse's foot;" indeed, ever since I went to India in 1815; and from the various positions in which I have been placed—as veterinary surgeon in charge of large breeding studs, and in my career of service in the Artillery and Light and Heavy Cavalry, and afterwards, during a lengthened residence in Germany (where I devoted my mind still to the pursuit of the same object)—it must be admitted that I have had extensive opportunities of observation.

In reflecting on the different states of the feet of many thousands of horses of all ages, and under different circumstances, it occurred to me, that their varied shapes were dependent on the conformation of the individuals, and that certain causes produced certain shaped hoofs; also, that however varied the forms of the feet, yet that the hoof had a determinate proportion, and that rules might be given whereby we could, in all cases, shew the extent and thickness of the horny covering at every portion of the foot. I need not say, that the researches incidental to these inquiries have cost me much time, trouble, and expense, as they were carried out on extended scale.

Before entering into individual peculiarities, I think it necessary to premise some general remarks. The convex surface of the horse's hoof partakes of the shape of the cylinder and cone, though we seldom find it perfectly cylindrical. It is the cone or shelving shape which causes the varieties in the appearance of feet, as this shelving or spreading out may exist at various parts of the

hoof, according to the peculiar make of the animal, and the manner in which the weight is thrown upon the foot; and it seems to be produced by the sole, influenced by the weight, abutting against that particular portion of the crust, and causing a gradual shelving out and increased growth of the hoof at this part, and this always opposite to where the greatest degree of weight is sustained; and the shelving generally commences about the middle portion of the wall, and gradually extends to the lowermost edges. In well formed feet in a state of nature there is always a degree of this shape on the outer quarter, which, however, according to the general custom of shoeing from its projecting beyond the edge of the circular shoe, is taken away by the knife or rasp, instead of being preserved and the shoe properly adapted to it; and consequently the nails, instead of being driven through firm insensible horn, are too frequently inserted near enough to the sensible parts to cause pain to the animal, and if not absolute lameness, yet a short contracted step, too common with newly-shod horses. The upper portion of the hoof may be considered to approach nearly to the cylindrical shape. The disposition of horn that forms the shelving is dependent on the original conformation of the animal in regard to weight, as also on the structure of the extremities, and the consequent action and position, which thereby influences the degree of weight and the distribution of it on particular parts of the hoof; thus more weight is thrown on the hoof of a heavy than a light animal, and on the fore than the hind hoofs; for the fore hoofs support the head, neck, and anterior extremities, whilst the hind hoofs support but the posterior extremities and comparatively little of the body; except in the paces of progression, when the posterior extremities more particularly form the levers to propel the body forwards. According as the action is high or low, so is the weight in progression thrown more or less frequently on the hoofs, causing a difference in the weight received, and influencing the shape of different parts of the foot; also, as the joints are more or less angular, that is, the pastern bones placed obtuse or acute, so is the distribution of weight to particular parts of the foot, and thus at different ages up to puberty, in the same animal, we have a variety in the shape of the hoof. To the lesser degree of weight sustained may we attribute the difference in shape of the hind and fore feet; and to the peculiar upright position of the limbs, and general light make of the anterior part of the body, may also be attributed the fact of the shape of the feet of the ass and zebra, and of the mule (except under peculiar circumstances hereafter to be described), differing from those of horses: being circular, but not shelving. I consider that the proper declination of the hoof in a healthy foot ought to be 33° from the perpendi-

cular, whilst it is in the air; and that when the foot comes to the ground and sustains weight, it becomes 35°, the foot having declined 2°. The proper degree of declination is a point which ought to be particularly attended to; since a deviation from a healthy standard must entail a difficulty, at times an impossibility, in carrying on the proper action and spring of the hoof; the laminæ either being placed too much on the stress, or otherwise put out of use, when ruinous concussion is the result. The declination of the foot may become altered injuriously from a variety of causes; such as the animal being allowed to run on marshy grounds without shoes; paring away the heels or toes unduly; and, in heavy horses, thinning the sole, especially at the corn places, and lowering the heels, thus allowing the foot to sink backwards and the sole to descend: too common a result in the English cart horse. To the same cause may be attributed the origin of the many horses we see with flat or sunken soles, totally unfitted for quick work. The relative depth of hoof to maintain the declination of 33° from the perpendicular should be, two at the toe to one at the heel; and in healthy feet horn may be removed in these proportions, and our endeavour should be to bring back feet to this healthy standard, by lowering the heel or toe, or the adoption of thin or thick heeled shoes. Horses' feet that have become very sunken cannot, of course, be brought back to the normal state.

With regard to the Action of the Foot, in addition to the declination when placed on any yielding surface, I am of opinion that the points of the heels, when the frog is compressed, yield very slightly outwards, also that the remaining force is got rid of by the bulging out of the elastic matter round the coronet and at the bulbs of the heels, and that the sole of the horse's foot, in a natural state, does not descend, except in the degree appertaining to it in the declination of the foot. When pursuing my studies on the foot of the horse, I have frequently been obliged to take plaster casts of feet, shewing the state both in rest and action; and, I can safely affirm, that *in no instance could I be induced to believe there was the slightest lateral expansion of the quarters of the horse's foot in the manner usually ascribed to it.* I have very frequently measured, in the most careful manner, the dimensions of an unshod foot in the air, and also the impression of that foot taken upon clay, when a man had been seated on the horse's back, and *could not detect the slightest difference in the circumference of the lower edge of the hoof,* more than I have before stated. But in taking my plaster casts of the foot when in the air, and while supporting weight when on the ground, one important fact was always strikingly evident, viz. a declination of the hoof equal to 2°. It would take up too much space were I to describe the varied expe-

riments I have made, and all tending to shew this motion. A horse's hoof may spread or increase in shelving or growth; but let me remark, that it is against the laws of force that an inclined cylinder, like the horse's foot, should, as an action, expand laterally by pressure being applied. If the foot were perfectly flat, and the horse were to tread upon a level hard surface, the declination of the foot could not go on, as an inclined cylinder could not act against a plane, except space were left to admit of the descent; whereas, nature has so ordained, that a horse without shoes going upon natural dry soil, shall wear or curve the heels, as any one may readily see by a little observation; and in this case it will be found that the curved heels, so long as the horse sustains his weight upon the foot, will come to the ground. Practitioners who use tips to horses' feet cannot fail to have perceived this. The French were well acquainted with this peculiar wearing of toe and heel; and their shoes, since La Fosse's time, have been adapted accordingly, though the nature of the declination of the foot had not been understood, and no space was left between shoe and foot for the action; hence the shoe is imperfect.

THE ART OF PROPERLY PRESERVING AND DEFENDING THE FOOT of the horse is not merely handicraft, but it requires a knowledge of the structure, form, action, bearing, functions and proportion, growth and consumption, of the hoof; the different states the hoof assumes when shod and unshod, and the predisposing causes which affect the hoof. Believing, as I do, that the spring, or yielding downwards and backwards, *is the true action of the hoof*, I conceive that it is absolutely necessary that this action should be accommodated when the horse is shod. It is from the neglect of this practice that the heels at the inflexions being fixed points, the sensible parts opposite become bruised, producing extravasation of blood which we call *corns;* an accident which never happens, however thick the sole, when the action of the spring is allowed; nor can a corn be cured, or the lameness relieved, so long as we do not take the pressure from the heel; since, by using a bar shoe, or a three-quarter shoe—in fact, by some manner or other "springing the heel"—and by allowing the liberty of the descent of the foot at the heel, we shall usually get rid of the corn, without paring out the horn at the inflexions.

THE TEXTURE OF HORN VARIES WITH THE BREEDING OF THE ANIMAL. The higher the breeding, the closer is the grain of the horn. The hoof varies in size and thickness of horn at various parts, accordlng to the age of the animal; and in horses of low breeding the horn is of a softer texture, and the feet are larger. The difference in forms of hoofs are altogether dependent on indi-

vididual conformation, the degree of breeding, mode of rearing, age, &c. There is least horn at the base of the foal's foot, and the substance of horn gradually increases as maturity advances. This shews that a knowledge of the arrangement, extent, and modifications of the horn comprising the hoof, becomes a very valuable study.

To give a general Idea of the Laws of Conformation, I shall attempt to divide horses into six classes, and to shew how shape and make in these various classes influence the hoof.

1st Class of Conformation.—The head, neck, and shoulder very light. Withers high or low. Position of the limbs very upright, particularly the pastern joints. The action may be either high or low. The corresponding hoof retains the same form as the foal's; that is, *circular;* or, even smaller at the ground surface than at the coronet, with high heels.

2d Class of Conformation.—Head, neck, and shoulders, heavier than the 1st Class. Withers, either high or low. Position of limbs, proper; being neither too upright, nor too much aslant, more particularly of the pastern joint. The action of the horse may be either high or low.

The hoof in this case will be of a larger area than the preceding, and its posterior parts will be more developed.

3d Class of Conformation.—Head, neck, and shouders, heavier than in the last Class. Withers high or low. Limbs well shaped, particularly the pastern joints. Action either high or low. The hoof in this case, merely in consequence of the difference of weight, will have a larger area at its base than the preceding, and will incline to be large and open.

4th Class of Conformation.—Under this head I include the hind hoofs, which have in all respects less weight to support.

The hind hoofs vary from oblong, approaching to circular, but rarely assume the conical shape; and the area at the base is smaller than in the fore feet.

5th Class of Conformation.—In this class I have placed all varieties of feet, the products of malformation, or defective position of the legs or joints; and I will endeavour to explain a few of them.

A horse may have his fetlocks bent inwards, or have crooked legs, or his chest be narrow; in which case he will turn his toes *out*, and there will be a shelving or conoid shape on the outer part of the foot, whilst the inner quarter may from this appear misshapen or contracted. This arises from the greater degree of weight being supported on the inner side; which, in consequence, becomes straight or contracted, according to the degree of weight received; while the opposite quarter invariably shelves, the weight being, in this case, borne *across* the foot. This important

fact, of the quarter of the foot which receives the greatest weight contracting according to the degree of weight received, is at direct variance with generally received opinion; weight being supposed to cause expansion. In confirmation of this, I need, however, only point to one fact, which will come home to every observer; which is, that the inner quarter, which is more under the centre of gravity, and *generally* receives most weight, is usually straighter than the outside quarter; and although we have not expansion, we sometimes have a rupture of the fibres of the hoof, commencing at the coronet, where there is most motion, called sandcrack. A horse, from having too broad a chest, crooked legs, or pasterns bent outwards, will turn in his toes; and a shelving of the hoof, or conoid shape, will be found on the *inner* part of the front; while the outer quarter may appear misshapen or contracted. The outer quarter here sustains the greatest weight, and the opposite quarter shelves. I will also remark, that, at the quarter where the greatest weight is received, the greatest wear of horn takes place; and therefore there is always a perceptible difference in the depth of horn at the quarters in these cases.

When the position of the fore legs, seen in front, is too upright, the weight is supported across the base of the hoof, from the toe and heels, and the shelving takes place on each side of the front, or directly in front, and the heels are strong and deep.

When, from crookedness of the hind legs, the horse is what is called "cat hammed" (that is, the hocks are too close together), the toes turn *outwards*, and if the weight is sufficient to produce shelving, it will be on the *outer* part of the foot; and *vice versâ*, when the hocks are too far apart; the toes then turn *inwards*, and the shelving, when the weight is sufficient to produce it, will be on the *inner* part of the foot.

When the position of the hind legs, seen from behind, appears straight or upright, the shelving, when it exists, will be on both sides of the foot, or directly in front. I repeat, that, with respect to hind feet, on account of want of weight, the shelving does not take place to the extent it does in the fore feet, yet are they regulated by precisely similar laws; and though the weight may not prove sufficient to produce shelving, yet will it *tend* in that way, viz. in oblong feet, to the circular shape; and in circular, to shelving, according to the weight received.

The above are a few of the varieties of feet referrible to malformation; and I invite the profession to a closer study of this subject. Doubtless, numbers of horses have been rejected as unsound, from time to time, from being alleged to have *contraction* of the inner or outer quarter, when the asserted "contraction" has entirely depended on the *conformation* of the animal.

ALTHOUGH CONFORMATION IS THE PREDISPOSING CAUSE of

this apparent contraction, yet is it *weight* which is the immediate cause, and this it is that renders contraction always most difficult to remove in a heavy horse. In a horse which turns his toes *out*, the *inner* heel or quarter appears contracted, and more worn; that is, it is below the level of the other; and if we attempt to keep it level with the outer quarter we shall assuredly increase the contraction, by causing the imposition of more weight upon it. This may be easily shewn by letting in a portion of a shoe into the hoof at the inner quarter only, leaving the rest of the foot at liberty; when we shall find, that, if we have not lameness, we shall have a greater degree of contraction ensuing, from the animal not being able to wear down the inside, from its being protected by the iron, so freely as before; and hence, from that quarter of the foot receiving more weight, the contraction becomes greater, and the shelving of the opposite quarter will in the same ratio be increased; and the only means to get rid of the contraction, is to free the quarter, and not to prevent this wearing down of the hoof. This experiment I have tried practically scores of times.

6TH CLASS OF CONFORMATION. Under this head I comprise the mule, zebra, wild ass, and young domesticated ass. These animals strikingly exemplify the laws of conformation on the shapes of hoofs. For instance; in those mules which follow most the character of the horse formation, the hoofs sometimes shelve a little; whereas, in mules which partake most of the character of the ass formation, the hoofs shew no disposition to shelve. The wild and domesticated ass have always the cylindrical hoof.

Although there are only six classes of conformation specified by me as having hoofs consonant with these attributes, characteristics, &c. &c., yet there are innumerable varieties of shapes which require practice to familiarise us with. As a general rule, we shall find the lowest level of the sensible parts (that is, we should soonest reach blood by paring the foot) at the point opposite to where the shelving takes place, or where there is no shelving, at the toe. In the general formation of the colt's foot we have a slight shelving on the outer quarter, from the weight being supported more on the inside, from that quarter being more under the centre of gravity; and this is provided for by the peculiar anatomical formation of the knee-joint. The same remarks apply to the hind foot and the hock; and these are things which should not be overlooked in practice; for if such peculiar formation of the foot were not necessary, Nature, which supplies nothing superfluous, would not have granted it.

IN THE FIRST VARIETY OF HOOFS, the lowest level of the sensible foot is at the inside toe, and the highest at the inside heel. In the second variety, the lowest level of the sensible parts is at

the toe, and both heels are alike in level. In the third, the level of the sensible parts is the reverse of the first variety.

A reference to the lowest level of the sensible parts of the foot in horses of peculiar conformation will serve to explain why we occasionally find a horse with very high heels; and the farrier will tell you that he cannot "lower these heels," because in paring he comes too near the sensible parts at the quarters. Hence it is that the knowledge of the lowest level of the sensible parts in horses' feet is of the greatest importance. The smith can only ascertain this by the application of his thumbs, and can do this only when the sole is thin and yielding; a state which I shall hereafter shew is an unnatural and injurious condition of it, and in which, from diminished substance of horn, there is also diminished power in the hoof to perform its functions, whether they be those of defending the soft parts within, or acting as springs to the animal while supporting the weight of the body.

When there is little or no shelving at the Base of the Foot it is *circular* in shape; but when shelving exists, there is a divergence from the circle, and it measures then in the proportion of 12 across the foot to 13 from toe to heel. The impression of the sensible foot upon its horny covering inside, corresponding to the tread of the foot, is circular, and, measured by the same rule, is 10 by 10 (as any one will ascertain by dissection). But the base of the sensible foot altogether is as 10 by 12; because $2\frac{1}{12}$ths of it incline upwards and backwards to the bulbs of the heels, behind the inflexions of the bars; therefore $2\frac{1}{12}$ths of the sensible foot are posterior to the corn places; and since the base of the sensible foot is covered by a continuous highly vascular membrane, up to the bulbs of the heels, how can paring out of the corn places give any immediate descent? Can the $2\frac{1}{12}$ths of the sensible foot which are behind the inflexions be wedged into the angle of the heels? And I presume, as it is covered by a continuous highly vascular membrane, that a part of it cannot do so without the whole, else laceration of the membrane must ensue.

I therefore think it is evident, that the theory of the corn-places being pared out to allow of the descent of the heels of the coffin-bone will hardly bear investigation, and that we must look to something else as a cause for the bruising of the sensible parts which occasionally takes place at the heels. I am of opinion, that it will be found to be the restrained downward and backward motion of the foot, in the line of direction of the force or weight impressed on it, in horses of certain conformation where this action is imperatively required, and we thus usually find corns to take place at the inner heel.

I think it is very plain that no immediate descent of the heels

can take place in a horse having corns merely by paring out the horn at the inflexions, and that it becomes absolutely necessary, as a means of cure, to allow of this descent and liberty to the imprisoned heel, and this can only be effected by leaving space between the shoe and foot at the heel, as we constantly are obliged to put in practice, or by the use of the bar-shoe or three-quarter shoe, &c. Besides all this, if Nature had intended the heels of the coffin-bone to yield into the space at the bars, how comes it that the greatest depth of horn is precisely at this very spot? and therefore it becomes a necessary question, whether corns should be pared out, and whether simply allowing of the motion of the foot will not get rid of them. I dare say not a few practitioners could state the wonderful effects of tips or three-quarter shoes in these cases.

Fearing that my meaning respecting conformation, as far as it affects the foot, should not be perfectly understood, I think a case in point might assist the description. A first-rate race-horse, "The Merry Monarch," is painted by Herring, and his picture is shewn to me; but I have never seen the animal. The artist describes him carefully thus, at the foot of the painting:—"The Merry Monarch," the winner of 'the Derby,' is a bright bay horse, sixteen hands high, very light neck, high in his withers, large ribs, deep brisket, oblique shoulders, good arms and flat legs, good open feet, turns his toes a little out, straight back, tail set on well, quarters long, large thighs and gaskins, with good hocks, which he rather twists out in his walking."

I look at the horse's picture, and find he is a large bony colt, and that he slightly turns out the fore feet, and slightly turns in the hind feet. I see that although he has a light neck, yet that he has a great preponderance of weight in his fore parts, and that if an imaginary perpendicular line were drawn from the arm upwards, there would be a considerable quantity of the breast and shoulder *anterior* to this line. I must therefore, in spite of his light head and neck, place him in my third or heavy class of conformation. Considering the description given by the artist of the horse, and comparing it with the picture, I would know, of necessity, that the feet would be large and open, what are called "good feet." The shelving would, of course, be on the *outside* of the toe. The inner heel of the fore foot would be more worn than the outer, and if the shoes had been on any time it would be below the level of the outer heel. From the action of the hocks, the reverse would take place in the hind foot, as the outer quarter would sustain more weight and be more worn than the inner, from turning the toes in. This extra wear of the inner quarter of the fore foot and outer quarter of the hind foot would take place independently of shoeing; since it would be exactly the same if the horse were running

wild without shoes. The farrier can never change the predisposing causes—he cannot alter conformation, although he is often expected to do so. This horse would require the inner heel of the fore foot to be most sprung, as there is most action there. If a wheeler in harness, the hind shoes would require to be made thicker on the outside, or to be steeled there. I know at once, from the description, that if this horse had a contracted fore foot, it *must be the inner heel only*, and from his weight it would be a *low* heel, and not a high one, although a thorough-bred horse. Notwithstanding high heels are oftener found among light blood horses, yet there are many with heavy fore quarters and large bone, with increased volume of hoof, and low heels; besides this, there are many heavy dray-horses with the angles of the joints so obtuse, or so upright in the limbs, that, notwithstanding the weight, the hoofs are upright and the soles concave; but the low heel and flat sole is more frequent among heavy varieties of the horse.

The area of the base of the hoof is therefore different in animals of different ages and classes of conformation; as a general rule, the greater the degree of weight supported by the hoof the greater the area of the base. It is of least area in the foal, more in the yearling, still more in the two-year-old, and increases with the substance and weight of the horse. The area is also greater in the second class of conformation than the first, and still greater in the third than the second; whilst in the fourth class (hind feet), by the same law, they have a smaller area.

As there is most shelving at that portion of the hoof which has the most tranferred weight to support, so is there most action in the opposite direction to the shelving; thus, if the shelving is on the outer part of the front, the greatest wear is on the inner heel, and *vice versâ;* but when the shelving is on both sides of the front, or directly in front, the action of both heels is alike.

In a state of nature, on a dry soil, the heels always become curved, varying in degree with the conformation; but when the weight is sustained on the foot the curved portions come down to the level by the declination of the foot in the direction of the force impressed. This is forcibly shewn in the young horses in Arabia, and indeed throughout the east, which follow the dam; but in England, where a colt is reared in a field of soft grass, or in a paddock, the heels may not be worn; but the action of the hoof nevertheless goes on in the soft ground, although it would be impossible for it to take place on level hard ground, where wear would begin to take place at such parts as there was most action, according to conformation; and thus would Nature soon find her own remedy.

Now, it is very easy to apply what takes place in the different

states of the hoof (both of which are natural) to the practice of shoeing; and what is the result? Why, that in order to admit of the spring or action agreeable to the conformation, we must modify the practice of shoeing in individual cases so as to carry out the spring of the hoof; and that so great a necessity does not exist for this spring in each class of horse as in the 1st, 2d, and 3d class; we have, progressively, more weight thrown on the posterior parts of the foot. In the 4th class, there being less weight (it being the hind feet), the spring is not required; and in peculiar cases of malformation, our practice requires to be changed, according to circumstances. On conformation, then, depends the practice of farriers; and we must never forget, in our examinations of horses, that peculiarities of form will exist in the feet according to the conformation of the individual; and therefore, the most perfect foot ought to be considered as that which agrees best with the age and predisposition from conformation. I have much more to say, but must leave the subject for the present. Probably, in a future number, if this proves acceptable, I may renew it.

MR. REEVE IN REPLY TO MR. GLOAG, CONCERNING THE ACTION OF THE FOOT.

To the Editor of "The Veterinarian."

Sir,—ALTHOUGH I perfectly coincide with your editorial remarks, in reference to the great question before the profession of descent of the sole and lateral expansion of the horse's foot, viz. "That nothing short of *actual experiment* can now avail;" still, as Mr. Gloag, after testing those experiments of mine, has reported results which not only offer positive contradiction to my own, but which, if unanswered, would almost leave a doubt of their veracity, I must claim your indulgence for the insertion of a few observations.

The tenor of Mr. Gloag's remarks goes to confirm the impression that he has tried the experiments I recommended, and found them, so far from corresponding with my description, rather tending to confirm a contrary theory, and establish the doctrine of "Non descent" and "No expansion." On quoting Mr. Gloag, at page 131, end of paragraph 1st, we have the following. "I have no little pleasure *therefore*, after submitting *Mr. Reeve's plan* to trial, to consider myself fully justified in maintaining my first opinion, and that these experiments, performed *after the same manner as his own*, prove the truth of my previous trials."

This I cannot resist contrasting with paragraph 3d, page 140, of the same number, wherein he says, "*Having objected to the shoe intended to prove the fact of the descent of the sole, as used by Mr. Reeve,* on the grounds, &c. &c. &c., I adopted some shoes with a trifling *difference* of construction." How "trifling" the difference, may be seen by comparing the descriptions of each.

Now, I contend that the chief experiment, and that upon which the truth of the results given by myself rested, has really not been put to the test, but others substituted in its stead; unless, indeed, Mr. Gloag can be understood to have submitted my plan to trial, by "objecting to the shoe intended to prove the descent of the sole," and "performed the experiments after the same manner as my own," by adopting some shoes with "a trifling difference of construction," whereby he proved "the truth of his previous statements," and "*therefore* considered himself justified in maintaining his first opinion."

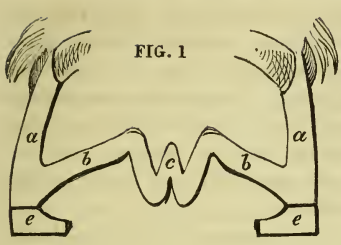
Whether the readers of THE VETERINARIAN will perceive the same consequence, I cannot pretend to decide.

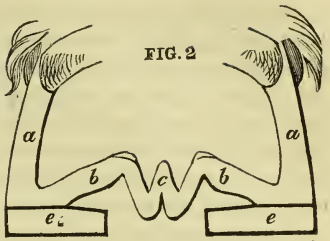
It is evident that Mr. Gloag did not rightly understand the construction of my shoe from the description which I gave of it, or he would not have spoken of "the pieces which were welded to the heels and *crossed* the frog;" for in the shoe which I used, for the purpose of testing the descent of the sole, no such bars existed. And although Mr. Gloag seems to consider that the shoe which he has tried is a satisfactory test of the non-descent of the sole, I certainly do not; and will, therefore, take the liberty of pointing out the leading objections, both in its construction and application, which, I apprehend, have induced such very opposite results.

The shoes employed by Mr. Gloag were very broad in the web, varying from $1\frac{5}{8}$ inch to $2\frac{3}{8}$ inches in the breadth of cover. In some the upper surface was slightly bevelled, in others it was perfectly flat. And with regard to their application, it is remarked "that the trial-shoe was firmly *imbedded,* by burning a seating."

It will be seen, upon reference, that the shoe with which I experimented had an ordinary seating, i. e., of the breadth, or very little more, of the crust, and that its concavity prevented its pressing in any degree upon the sole of the foot.

Now, in order to comprehend more fully the opposite effects of these shoes, we will refer to the accompanying illustrations; No. 1 being a transverse section of a hoof shod with my shoe; No. 2 being a similar section to which the experimental shoe of Mr. Gloag is applied; the one being imbedded, the other not.





a, a,....The crust.
b, b,....The sole.
c, c.....The frog.
e, e,.... The shoe.

It will here be perceived, that when a broad-webbed shoe, having a flat upper surface, is imbedded in the foot, it acts mechanically as an inflexible impediment to any descent of the sole, by shoring it up at that point at which its descent commences, viz. its junction with the crust; whilst, on the contrary, the concavity, upon the upper surface of the shoe in *Fig.* 1, freely permits of that descent of the sole which would be opposed by the broad flat shoe in *Fig.* 2.

So far, then, as the question of the descent of the sole is concerned, I maintain that it remains where I left it; and nothing would gratify me more than to hear that other competent and inquiring members of the profession had tested it by following out *to the letter* the experiment as described in my paper of February last.

With respect to those objections to which Mr. Gloag has alluded, I can only observe, that they had been anticipated and guarded against; and I think, Sir, that you, who have seen the shoe in question, will admit that, from the strength and manner of its construction, there could have been no springing upwards of the bars into which the screws were inserted.

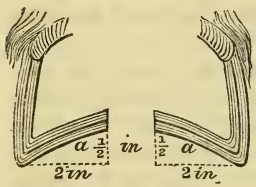
We now come to the question of lateral expansion. As it would be mathematically impossible for the dome-like form of the sole to approximate nearer to that of a plane (which it must in descending) without extending its base, and consequently dilating the surrounding crust, thereby producing what is understood by lateral expansion, any experiment to demonstrate such expansion, after the descent of the sole has been proved, would be superfluous, since, when the "descent" is admitted, the "expansion" is proved. Nevertheless, as I had made such an experiment, and reported the result, which has since been tested by Mr. Gloag, and alluded to by him, I must refer to it.

It appears, however, to me, that Mr. Gloag entertains a somewhat exaggerated idea with respect to the amount of dilatation necessary to constitute lateral expansion; since, in reference to my experiments in clay and gutta percha, he inquires, if I compared the mould in clay (taken during action) with that in gutta percha (taken during repose); observing, that it was an "opportunity of silencing all argument," and inquiring, "What better experiment could possibly be instituted?"

I answer, that the total amount of expansion that could have taken place under the most favourable circumstances would have been too minute to have been ascertained by such rude means; since, from the moist and yielding nature of the clay upon the withdrawal of the horse's foot, the breadth of the mould would have been affected to a degree equivalent to, if not greater, than the expansion itself.

We may easily arrive at an approximate to the expansion which takes place in a foot 5 inches wide, and having a concave sole half-an-inch high, when that sole descends to the depth of one-tenth of an inch.

In a transverse section of a hoof of the above dimensions from which the frog had been extracted, thereby leaving an aperture 1 inch wide, we perceive that the edge of the sole (*a*, *a*) becomes the hypothenuse of a right angled triangle on each side of the frog, the base of which is 2 inches, and perpendicular $\frac{1}{2}$ inch in measurement.



Now, the sum of the increase which takes place in each base upon the descent of the sole, or hypothenuse, to the depth of the one-tenth of an inch, would, together with the amount of expansion which simultaneously takes place in the frog and commissures, give a very fair approximate to the actual degree of expansion.

By a descent of the sole one-tenth of an inch, the perpendicular would be reduced from five inches to four inches, and our question is, how much has each base increased thereby?

Now, by the 47th problem of the first book of Euclid, the sum of the squares of the base and perpendiculars equals the square of the hypothenuse, therefore $(2^2 + ,5^2)$ or 4,25 would represent the square of the line indicated by the edge of the sole; and it therefore follows, when the sole has descended so as to reduce the perpendicular to ,4 of an inch, that the formula $\surd$ (4,25—,16) or 2,022 inches would be the breadth of the base, which being doubled (for there is a triangle on each side) gives 4,044, or an excess of ,044 of an inch, which is the expansion caused by the descent of the sole; viz., a little more than the one twenty-fifth part

of an inch. To this must be added the amount of expansion in the frog and commissures, and the calculation is complete. It will be seen that I have disregarded the curve of the sole, considering it too slight to materially affect the result.

Seeing, therefore, the very small amount of lateral expansion which we are to expect, Mr. Gloag will perceive my motive for bringing the *lateral* pins into actual *contact* with the crust, instead of leaving a small space, as was done in the experiment with the sole; and he will also perceive that, by the interposition of a thin sheet of tin between the points of the pins and crust, he monopolized nearly the whole amount of expansion that could have taken place. Nevertheless, he obtained indications to the fortieth of an inch, together with sundry *scratches* and *bruises*.

Mr. Gloag is quite correct in speaking of the scratches caused by the motion of the shoe: these I myself observed, but there were also unmistakeable punctures.

Having, now, vindicated my experiments from the discredit which they might have sustained by the substitution of a different kind of shoe from the one I used, and also pointed out the reasons which operated to prevent Mr. Gloag from obtaining results similar to my own, I will briefly allude to an observation at page 168, paragraph fourth. Here Mr. Gloag has mistaken my meaning when he understands me to say, "that, if a space were left between the heels of the horse's foot *and the shoe* in natural action, no approximation of the heels of the foot and *the shoe* would take place; but immediately the horse wished to do so, he could dart his heels down." My observations were intended to apply *solely* to the *unshod* foot; the allusion to his sliding upon the wooden pavement was merely intended as illustrative of the use to which the horse instinctively applies the hinder part of the foot, even when it is impossible for him to avail himself thereof in consequence of the interposition of the shoe. But as the bow must be occasionally unstrung, so relaxation is beneficial to the philosophic mind; and Mr. Gloag has here, I suspect, been resting from his labours whilst indulging in the little wilful pleasantry of misconception.

Trusting to find that the subject has been taken up by other parties more able than myself, with many thanks for your kind indulgence, I beg to subscribe myself,

Sir, your's faithfully,

W. Geo. Reeve.

March 9th, 1850,
1, Elizabeth-street, Eaton-square.

P.S.—Allow me to add, that, should there really exist the downward and backward action as described by Mr. Gloag, by

which the heels are supposed to sink deeper into the soil than does the anterior part of the foot, I am of opinion that one part of it at least, viz. the depression, might easily be tested by the experiment over well-tempered clay. In my own experiments I particularly examined the casts to ascertain if such really was the case; but in *no* instance did I find indications of the heels having sunk deeper into the ground than other portions of the under surface of the crust.

I should be gratified, however, to hear the results of a repetition of these experiments, for I think so important a subject cannot be too closely tested.

ON THE EXPANSION OF THE HORSE'S FOOT.

By Wm. Ernes, *M.R.C.V.S., Dockhead, London.*

M. Lafosse, sen., to whom veterinary science is so much indebted, was the first who described the elasticity of the foot, or, better, the flexibility of the hoof*. This was afterwards still further explained by M. Lafosse, jun., in his Manual Hippiatric, published in 1766; a work written in questions and answers, and in which the three-quarter or short shoe is recommended. This shoe terminates a little beyond the quarters, and it is made gradually thinner, to allow the frog and the heel to come to the ground at every step. One question in thus shoeing short is—Is there no fear of the horse going lame from the wear and tear of the parts, in consequence of being brought in contact with the ground or hard pavement substances?

Answer.—It is true that there is an old prejudice that, to protect the heels, it is necessary to make the shoes long; and when the advocates of these shoes are told that the iron of the shoe is as hard as the ground or the pavement, their answer is, that they take care to leave space between the shoe and the heels, to prevent them from bearing on the shoe, which, in fact, they do; so that, if you take up the foot, you may introduce the blade of a table-knife between the shoe and the foot: but this only holds good while the foot is *off* the ground; for if you let it down, and take up the other foot, they look very foolish, as in this position they are not able to introduce the smallest substance, even to that of a beaten gold leaf between. They fancy next that the shoe

* Observations et Découvertes sur les Chevaux, avec une nouvelle pratique sur la Ferrure.—Par *Lafosse (père)*, Paris, 1754.

must have bent, and consequently make it stronger; but, to their astonishment, the same thing occurs as before, by which they are quite disconcerted.

In another part of the same work, the author says, the heel of the foot must be in contact with the shoe; for the hoof is flexible; and, further on, the hoof by its flexibility follows the heel of the shoe. But this means nothing more than the downward motion of the heels; certainly not lateral expansion. The celebrated Bourgelat, some years after, in his *Traité de Ferrure*, says—The elasticity by which the hoof is endowed, pervades every part of it; and this assertion of the author is supported by some experiments, which are neither happily selected nor very conclusive; but, like the former writer, he makes not the slightest allusion either to lateral expansion or descent of the sole, which are first mentioned by Mr. Bracy Clark in his PODONOMY, the edition of which was published in 1809, and of which the following short extract will convince us. "It appears also, in fact, that it is not so much from the upward pressure against the frog as from the downward pressure of the limb, and weight of the body, upon the bones of the foot, that should produce this effect of expansion upon the yielding contents of the hoof; timely assisted, and in due time prevented from too much depression in this direction—by meeting with the support of the frog, then brought to the ground at the time the strain and weight is greatest; the *sides of the foot then expanding laterally through the whole extent*, and springing back again to their places, on the removal of the exertion and weight. And they must in any violent exertion, as galloping, &c., where the force is tenfold that of the mere weight, make these parts, if at liberty, play or expand to an extent that, merely considering the hoof in the hand, can give us but a faint conception of."—Page 35-6.

From page 92 the following extract may be taken:—"Again, the lower circumference of this arch of the sole, which may be considered in the light of the heels of the arch, is everywhere abutting against the sides of the wall, which, as we have formerly shewn, are rendered yielding to its impression against them, and the sides of the frog dilating (which retracts and shortens this part), affords full opportunity for the extension, and which is necessarily accompanied with a descent and flattening of the sole, in which action all parts of the hoof combine; and in this manner, we maintain, is performed the elastic movement of the hoof, and which we apprehend to be essential to its well being and healthy existence." This opinion has been followed, with very slight deviations, by all subsequent writers on the horse's foot. Many controversies have arisen as to the priority of these views; but very few experi-

ments have been made, as far as I know, to test their correctness. Eighteen years ago (in 1832) I made some experiments on the feet of young horses, some of which had only been shod a few times, while others had never been shod, in order to ascertain, first, *the descent of the sole;* and, secondly, *the lateral expansion of the hoof at the heels.* I shall not now enter into the means employed, or the details of these experiments; suffice it to state, that the conclusions drawn from them were *subversive* of the descent of the sole, and also of the lateral expansion of the heels, though they fully corroborated *the elasticity of the hoof,* and PARTICULARLY *the descent or bending of the heels in the direction of the fibres of the hoof.* I have given a full account of these experiments in the discussions of the Vet. Med. Association, in the "Transactions" of which they also have been reported (Sess. 1838-9). I do not bring forward these experiments to claim priority of those extensive and ably conducted experiments of Mr. Gloag, in comparison to which they are only trifles, but merely because they lead to the same conclusions. I agree with the Editorial remarks, that "nothing should pass current but the results of actual experiments;" and may add that, incredulous as I am, I am most willing to confess that I am wrong if by any experiment it can be proved that *the horny sole actually descends* and *the heels expand.* But let those who try experiments do it fairly on unpared feet; or else, the result may be fallacious; since it is easy in the overpared foot, particularly where the bars have been pared away in what is commonly called "opening the heels," to make the foot expand, or, better, bend the heels by applying both hands, and pulling them in opposite directions. The elasticity or yielding of the hoof I do not deny; but, if I am not mistaken, instead of expanding when on the ground, it contracts by the traction of the bones and yielding of the soft parts. When the articulation of the foot is on the stretch, at the same time the lateral cartilages expand, and the heels press downwards to meet the ground or the shoe, as the case may be, and a fulness is perceived when off the ground; and the absurd method of paring the feet has, I fear, misled many as to its true action. The question may be asked, "Why do you *seat* the shoe, if there is no descent of the sole?" My answer is, that, though the seated shoe possesses no advantage, still it has a lighter appearance, and keeps in the stopping, &c. As a proof that the seated shoe possesses no advantage, we only need consider the concave ground surface shoe, which I very often use without the least inconvenience. Also, the French, Italian, and German shoes are not seated, and no evil results from their use. But then the drawing-knife, *which should be banished from our forges,* has not been introduced; and there is no scooping out of

the feet, as is too often the case here. The moderate springing at the heels, or leaving a space so as to introduce the blade of a thin spatula between the shoe and the foot, should not be neglected, even in the shoeing of the cart-horse; for in cart-horses nothing contributes more to their safe and easy going than this; and one half of the heavy draught horses are crippled by the thick heeled shoe, and the consequent pressure on the heels. I may remark here, that I have for many years shod horses for my own use with a sort of short shoe or TIP, and that they afford the strongest evidence of the non-expansion of the heels and quarters; since, if there existed any lateral motion when the foot is on the ground, the friction would be so great as to cause the heels to wear away in a very short space of time.

BENEVOLENT ANNUITY FUND.

Ashbourne, March 14, 1850.

Mr. Editor,—YOU are aware that the formation of a benevolent or annuity fund for the veterinary profession has from time to time been brought before your readers by several noble-minded individuals.

We find, that Professor Morton took the lead in this matter: his proposals may be seen in the 12th vol. of THE VETERINARIAN, but no one was found to aid or abet his plans. Subsequently, we find, in the 19th vol. of THE VETERINARIAN, Mr. Baker, V.S. Reigate, again appealing to the veterinary profession, and was a little more successful than Mr. Morton, by bringing out letters of approval from Messrs. Anderson, Cherry, Dyer, and Mather. Also I was one who wrote to Mr. Baker, to encourage him to proceed with his good work. But all this ended in nothing. You appear, however, to think, from what you said in your last Journal, that the subject might be revived now with better prospect of success. The necessity of such a fund must be apparent to all. The French affair which has recently come to our knowledge calls loudly for something to be done. I could relate several tales of woe which have come to my knowledge.

In my opinion it can never be brought about if the subject is made a party one. Whatever differences there exist in the profession, they must, in such a case as this, be scattered to the winds: all must be united in this one affair at least. Permit me, then, through the medium of THE VETERINARIAN, to propose that the Veterinary Professors and President and Council of the

Royal College of Veterinary Surgeons have a special meeting for the consideration of this subject; and that preliminary arrangements be made for bringing the matter before the body of the profession at the yearly General Meeting, in May next. Let honour be given to whom honour is due. As Mr. Morton is one of the Professors, of course, he would be consulted. But, if I mistake not, Mr. Baker is not a member of the Council now, therefore he might be specially invited to attend. Hoping you will likewise use the influence of your powerful pen and interest, as a member of the Council, to bring about this desirable object,

I remain, your's, &c.

W. Cox, *M.R.C.V.S.*

EXPANSION OF THE FOOT.

By Arthur Cherry, *M.R.C.V.S., London.*

To the Editor of "The Veterinarian."

"Of all the passions that possess mankind,
The love of novelty rules most the mind:
In search of this from realm to realm we roam,
Our fleets come fraught with every folly home;
Striking our British breasts with awe and fear,
As once the Lilliputians ——." *Gulliver.*

"They demanded (of Mahomet), however, more palpable evidence addressed to the senses; that he should cause the dumb to speak, the deaf to hear, the blind to see, the dead to rise; or that he should work changes in the face of nature."—*Life of Mahomet.*

Sir,—I had hoped that the controversy which had been attempted to be raised upon the *non*-expansion of the horse's foot would be allowed to sink into the oblivion from which it ought never to have been dragged forth; nor should I now make any comment on the subject, after what I have before written, were it not for what has appeared in the last Number of your Journal.

In an Editorial article it is reiterated, "that a wonderful apathy has been manifested on a subject which one would naturally consider to be of great importance." This is, doubtless, only intended by the Editor to draw on a controversy, and thereby do somewhat towards a settlement of a question which some one or two have thought proper to raise.

A few words on the origin of this would-be-discovery of *a fact!* —God save the mark—and upon which *we*, the body at large, are to be told that we have lived all the days of our life; and, further,

the men with the best talents and reflections that have gone before us within the last hundred years, have, to use an oriental saying, "been eating dirt"—in other words, have been uttering that which we might and ought to have known was *false:* and if it was so easy to discover truth, as Mr. Gloag seems to have imagined it is, truly, indeed, should we have "eaten dirt," and to a considerable extent, too.

Let us examine upon what ground this serious charge is brought against us, and also let us go a step further and examine the *per contra*. In the May Number of THE VETERINARIAN, a letter, accompanying a statement of certain experiments on the horse's foot, appears, and is followed by the author's description of them. A second paper appears in June, and a third in July, with the conclusions or deductions drawn from these experiments.

The number of these experiments is twenty-four; of these thirteen were performed on the foot of the living animal; the other eleven were—*proh pudor*—performed on dead feet removed from the animal, *and squeezed in a vice.* And upon such evidence as this we are asked to give up our opinions—our creed—the very keystone of our knowledge of the foot, and upon which we can alone keep the foot in a state that shall render the animal capable of the exertion we require from him.

In the October Number I reply to this farrago of pseudo-experiments, and distinctly, and without any circumlocution, deny the correctness of the conclusions attempted to be arrived at. Nay, further, I go a step beyond what the logicians require in an argument: I give a *reason* upon which I founded each denial, except in one case, which I dismissed curtly, or I must have so severely handled it, that its public appearance would be a source of great regret. Each statement of mine I was prepared to support; but to my exceeding surprise, instead of a reply, no notice has been taken, and by consequence judgment goes by default, and the subject ought to have dropped. But, judge of the surprise that must be excited when the last Number of your Journal is perused, at the cool assurance with which Mr. Gloag comes forward in reply to Mr Reeve, and the manner in which he treats that gentleman, who, by the way, for a young man, has written a very excellent article, as clear as Mr. Gloag's is obscure; yet the latter has charged the former with his own errors.

But there is an episode in this affair which I shall now lay before your readers, and shew the matter in another light. Instead of replying to me publicly, as Mr. Gloag was bound to do, if at all, he wrote to me *privately*, from which I will make a short extract [if Mr. G. wishes it, I will publish his letter and my reply]. "At first I thought to have replied to you, but I could not have

done so without displaying personal ill feelings;" and again, "but at some future opportunity it is probable you will find any observations you made answered, although not addressed to you personally." This last paragraph can only be interpreted in one way, as a threat held up over me *in terrorem;* but I must own that I go a step further, and couple this paragraph with that disgraceful effusion under the title of "Shoeing Smiths," which immediately followed, and the internal evidence bears me very forcibly out in this conjecture; but looking on this departure from propriety as an effect of passion, disappointment, and want of acquaintance with literary usages, and therefore not to he harshly dealt with, and perhaps also feeling with Garrick—

> "'Tis the first folly of a simple youth,
> Caught and deluded in some doubtful ways—
> Then crush not in the shell this infant Bayes.
> Exert your favour to a young beginner,
> Nor use the stripling like a batter'd sinner,"

I replied, from which I will only give one extract. "If my remarks were wrong, they are open to refutation; but as such has not been done, I have nothing to say further on the subject. As to your remark, that I may be animadverted on at some future time, does not give me a moment's uneasiness; so far from it, I shall be delighted at such an event." The dates of this correspondence are October 21 and 22, 1849. I have heard or seen nothing in reply up to this date. My denials remain unrefuted, and until this is done no man of proper feeling would or could reply to another. The denial stops the further prosecution until it is disproved.

The writing to me privately instead of publicly answering me, and supporting his own doctrines, is so flimsy a veil to hide defeat, that a very child must see through it; and there the matter would and should have rested, but for the remark at p. 183 in the last Number—"nothing is likely to pass current save *the result of actual experiment.*" I have shewn the nature of the experiments upon which we were called on to rely. It is true that nothing can be easier than to repeat Mr. Gloag's famous experiments with the *dead foot and the vice:* I have done the same thing some hundred times, and with very opposite results. It is true that Mr. Gloag's experiments are on paper; but we must, after all, take the results upon his veracity, which for an instant I do not call in question; but, by the same rule, I claim to have my results believed from the experiments I have made. The numbers on which "*experiments*" were made I cannot now tell; they must be several hundreds, *and all upon living working animals.* I only mention the years in which they occurred. In the year 1822 the

horse pads invented by my father were commenced; and from that year up to 1827, there were unceasing experiments going on on the foot and its functions. During these years I was principal assistant to my father in these experiments; and I do not think a better school, either for perseverance or variety or ingenuity, could very readily be found. From 1827 to 1837 I carried on the same system on my own account, and to favour or disprove certain theories of my own: since that time, I have pursued other branches of observation; only from time to time seizing upon good cases to test the truth of my previous opinions, though founded as they were on long and laborious investigations, and repeated over and over again. But starting from the worst of ignorance, scepticism, and gradually understanding the question, not from books, for those with the self-conceit of youth I despised—not from the opinions of others, for I was disposed to believe no one;—I was trained and reared under the rigid axiom to "examine and think for myself," and sternly was it enforced and acted on. I trust that I have said enough on this point. I state nothing but what I have actually proved, and which, *cæteris paribus*, all and every one may prove again; but, if I have drawn wrong theories from facts which can be demonstrated, I am open to conviction and recantation. As to the schoolboy task of writing out a *case* of experiment, as one would a rule of three sum, I cannot nor will not. Like Scott,

> " I do not rhyme to that dull elf,
> " Who cannot image to himself."

I give the results of experiments in numbers as compared with Mr. Gloag's, in a ratio of not less than ten to one; and, if my veracity in any form of expression I choose to adopt is not as veritable as any other, it is time that I withdrew from all controversy and from all public life.

There were two modes in which I might have replied to Mr. Gloag's statements,—one by argument, the other by denial. I chose the latter, in which I was supported by the true principles of logic; but I also knew that the latter was the most difficult position in which I could place a sophist,—that of *proving* his own case: if it could stand such a test, it was worthy of serious consideration; otherwise conclusions drawn from *dead parts squeezed in a vice* were unworthy of more than a mere denial. Beides,

> " In many nice and ticklish cases,
> " There's much to lose, and naught to gain,
> " By affectation and grimaces."

If Mr. Gloag *was not prepared to support his position, he ought never to have made his speculations public.* It is for others to decide in what manner they shall reply,—not for him to choose.

As for his refusal to reply to me upon the grounds of my not being "courteous," it is a mere evasion.

I want no "personality" to support me; but, if Mr. Gloag cannot reply in support of his case without it, I shall know how to value it, and to treat it.

I must beg you to pardon my occupying so much valuable space, and taking up so much of the time of your readers; haply should they read so much of

"A tale about a bear and a fiddle."

I am, Mr. Editor,

Your's obediently.

March, 1850.

VETERINARY JURISPRUDENCE.

Dorchester County Court, *before* E. Everett, *Esq.*

Rashleigh *v.* Bishop.

This was a demand for £2..5*s*..6*d*. for keep of a horse, and the balance up to £20 for damages for breach of warranty. The plaintiff is a yeoman residing at Chickerell, and the defendant a farmer at Askerswell.

Mr. Phillips was for plaintiff, and Mr. Manfield for defendant.

The plaintiff was the first witness called, who stated—I bought a horse of defendant at Dorchester fair, on 6th August last, for £18; he gave me back 5*s*. for myself, and 6*d*. for the boy; he warranted him sound and correct; he said he was quiet in harness; he said he wished me particularly to keep him in house; I said I should give him a run; the horse was in good condition; he said his carter did not like him, and that was partly the reason of his selling him, and he had another colt coming on; I took the horse home and turned him out, after keeping him in two nights; when I first had him, I put him in a light cart, and drove about a mile; his mane was large, and lay on the off shoulder. In October I took him up, and worked him in a plough with two other horses for Mr. Groves, of Radipole; I saw him lean to the collar as soon as I put him in; about twelve o'clock I took him and the others out, because I wanted to go home; I first discovered him lame on that 4th of October, the same day he ploughed; he was

put into the stable and fed, and when cold turned out again in the field; the day but one after I again worked him, and at plough as before—three horses, and he behind; he worked better, and not very lame; I worked him again for five or six days, about six or seven hours a-day. About the 16th of October I ceased ploughing, because I had a job to do at home; I found he had got so lame I could not drive him any longer; I never worked him since; I got Mr. Fooks, a farrier, of Portesham, to look at him; also Mr. Goddard, of Fordington, veterinary surgeon. I wrote to defendant to know if I should send the horse back to him, or bring him to Dorchester fair on the 25th October; had no answer; saw defendant at the fair; he said he knew nothing the matter with the colt, but that, if I had not had him pulled about by veterinary surgeons and such like, he would have taken him back. On the 23d November, at Martinstown fair, I passed defendant several times, but he would not look at me; the horse received no injury whilst in my keeping from a blow or any thing of the sort; the horse was lame only when at work with a collar on him.

Cross-examined.—Never said my horse had kicked him; he was sold me as a four-year old; a mark is on his shoulder now, but his mane is gone with the collar; did not examine him when I bought him, but did when at plough; Mr. Groves paid me for the horse's ploughing; discovered no mark in the shoulder till the 12th October; the £2..5*s*..6*d*. claimed is a fair charge for the keep of the horse since he left off working; didn't offer to return him before I worked for Mr. Groves; Fooks did not rub in any oil on the shoulder; I rubbed in some ointment given me by Mr. Goddard, to reduce the swelling; shoulder was more swollen then than now: when defendant gave me the warranty, he did not add, "as far as I know;" on the 25th October, Bascombe and Baker were present; I did not say "I took the horse home, worked it, and found it according to word;" never said to Mr. Rendall that my mare had kicked the horse.

John Fooks, farrier, at Portesham, examined the horse on the 18th October last, and found the shoulder bruised; it appeared to be done by a blow, and a great while; did nothing to it; have seen the horse to-day, and he is nearly the same as then.

Cross-examined.—It must have been a blow of long standing; it must have been seen immediately; the flesh had withered from the bone.

Samuel Goddard, veterinary surgeon at Fordington.—About six weeks or two months ago, I went to the Plume of Feathers Inn to see the horse; found he had received an injury of some kind, so that the muscles had been absorbed, and the powers had disappeared, the scapula having yielded gradually to the absorption;

this amounted to unsoundness; pressure on the part gave pain: the ointment I gave plaintiff could have done no harm; it might have been an injury of two, three, or four months' standing; I am convinced I could not remedy the injury

Cross-examined.—When I first examined him, I found no appearance of external injury nor swelling; he could put his foot down, although the ligaments at the termination of the large muscle were injured. I can't fix the day I saw him, as I only received half-a-guinea for examining him, and did not put it down; I think he might work under such an injury; he might have worked on for ten days, but it wouldn't have been comfortable for him.

On re-examination.—Any increased injury would make him more lame. I don't think it could have occurred between the 4th of October and the time I first saw it.

By the Court.—I can't give an opinion whether the injury happened before the 6th of August last; I can't form an opinion whether the seeds of the disease had been there before the 6th of August.

Jeremiah Stickland.—I live at Portesham; on the 6th of August last, heard defendant warrant the horse sound in every respect; have seen the horse to-day; I consider the difference in value from the injury more than half.

On cross-examination.—Did not see the horse move on the 6th August; defendant did not add, "as far as I know;" the plaintiff keeps two horses.

Job Gill.—I live at Radipole; saw the horse at Martinstown fair on the 23d November, and again this morning; have had great experience in horses for forty years; I think the blow is an old one; I think the horse lessened in value £10; a sort of gristle was grown over the shoulder.

Henry Greening.—I am a blacksmith at Stafford; at August fair saw plaintiff about four o'clock, and the horse, after he had bought him; saw something peculiar in his way of standing. I think if sound he would be worth £27; it was not now worth more than £10.

Several letters were put in, admitted, and read, from the plaintiff and his attorney to the defendant, &c., offering to leave the matter to arbitration, but which was declined.

This ended the plaintiff's case, and Mr. Manfield objected that he could not recover for the keep of the horse, the horse not having been returned or tendered. The Court allowed the objection. He also objected that he could not recover the price of the horse, as he received pay for the work done by the horse; but the Judge did not allow this objection.

The warranty was here admitted, and for the defence was called,

Absolom Chick, of Askerswell, farmer.—Knew the horse which defendant had bred; saw him very frequently; he met with no injury in defendant's possession; saw him at work hauling manure a week before he was sold. I live two hundred yards from the defendant.

On cross-examination.—Defendant has six or seven working horses; I saw them nearly every day; the horse was broken in about last March twelvemonth; no injury was ever done him; I never examined him myself.

Richard Williams, sen., of Askerswell, blacksmith.—Knew the horse ever since he fell. I castrated him in May 1847; no accident happened then; I saw no injury in the shoulder on August 6th; I was present when he was delivered to plaintiff; I saw the horse to-day; it is very different now to what it was then.

On cross-examination.—Will swear that there was no enlargement on the shoulder when sold; I touched the horse several times on the fair-day, and leaned against him on both sides when he was standing.

Richard Williams, jun., son of the last witness, and a blacksmith.—I know the horse, and have shod him; it was not lame or injured on the 6th of August; I went to the fair with him; I saw the horse after the plaintiff had bought him; there was no injury then.

Cross-examined.—Did not examine the shoulder; I shod him the week before he came to the fair; plaintiff asked me if it was a good horse? I said, yes. I am the defendant's blacksmith.

William Waters, carter to defendant.—I know the horse, and have looked after him from the time of its being able to work; it was never lame nor had any thing the matter with its shoulder. I saw him the same morning as the fair; I worked him the Saturday, the fair being the following Monday.

Cross-examined.—I did not particularly examine him; I always cleaned him and corned him.

William Bishop, son of defendant.—I led the horse to the fair; I had him from the last witness; there was no injury up to the time of delivery. I saw the horse last Friday week; the shoulder was then very different.

Cross-examined.—Had not particularly examined him; the mane was pretty good.

Robert Rendall, of Chickerell.—Know the plaintiff, and asked him what was the matter with his horse; he told me his mare had kicked him; it was some time in October, I think; the horse was standing by at the time, and it was in the street.

Cross-examined.—I think Jacob Davis was there; I replied, it was a good job it never knocked the shoulder out; he said, it was.

Joseph Groves—Am a farmer at Radipole; hired plaintiff on 4th October to plough, and he finished on the 16th; didn't particularly notice the horse; saw plaintiff some days afterwards, and, observing the horse lame, I told him of it; he said, "One of the others kicked him;" I am sure the words were to that effect.

By the Court.—I don't know whether the horse I saw lame was one of those that ploughed.

Samuel Bascombe, of Portesham.—On the 25th of October heard plaintiff and defendant disputing about a horse; plaintiff said he had tried the horse the day after he bought him, found it to defendant's word, and then turned him out.

Thomas Baker.—Am a farmer at Askerswell; knew the horse; he was never lame: saw plaintiff and defendant on the 25th of October, and they had words; I asked plaintiff when he first discovered it, and he said Friday; he afterwards said it was a month or six weeks ago; he then got abusing me.

Thomas Wheeler Nobbs.—Am a veterinary surgeon at Cattistock; on the 29th of November last I examined the horse in a field at Chickerell; it had an injury in the shoulder from the collar; it might have been from a kick or a blow; I should think it then of six weeks' standing—not so long back as August 6th; he is now worth £10 or £12.

Cross-examined.—The injury was caused by want of action, and not from inflammatory action; I could cure this case in six weeks, and would undertake to do so.

By the Court.—Don't think there is any permanent unsoundness.

John Wallis Nobbs.—Am son of the last witness, and a veterinary surgeon, at Cerne. On the 29th November I examined the horse, and coincide in opinion with my father; the injury was recent.

Cross-examined.—Saw the horse to-day; not much difference in him now.

After the plaintiff's attorney had replied, the Judge said, the only question now was as to soundness, the warranty, sale, and the price—all being admitted; and after a long review of the evidence, an order was made in favour of the defendant.

The costs were allowed. The case lasted upwards of six hours.

*** This was an equitable verdict. There could be no reasonable doubt, from the evidence adduced, that the lameness proceeded from hurt of shoulder, contracted *after* the horse came into plaintiff's possession.—ED. VET.

COURT OF EXCHEQUER, *Monday, Feb.* 18, 1850.

(*Sittings at Nisi Prius, before the Chief Baron, at Guildhall.*)

HIGGS *v.* THRALE.

Mr. M. Chambers and Mr. Lush were counsel for the plaintiff; Mr. Bramwell appeared for the defendant.

This was an action in which the plaintiff sought to recover £25 under the following circumstances:—The plaintiff is a veterinary surgeon, and one day in August last he met the defendant, who is also a veterinary surgeon and horse-dealer, at Aldridge's Repository, when a talk came on touching a certain chestnut mare of the defendant, which he said he thought would "just do to carry his friend Mr. Higgs after the hounds." In a few days after, Mr. Higgs, his wife, and daughter, went down to the defendant's premises at Croydon, where they saw the mare, which, it should be observed, was avowedly blind of one eye. After a little discussion as to the condition of the other eye, and a trial at the trunk of a tree, the plaintiff agreed to swop his brown horse, valued at £19, with £6 in, for the mare, on condition that the defendant would "warrant her to be a good hunter, and to have one good eye." Both these stipulations the defendant readily undertook; but he wanted £10, and there the parties broke off, the plaintiff saying that, if the defendant would take his offer, he might send the mare. In a few days accordingly the defendant sent her, and, the money being paid, she passed into the possession of the plaintiff, who, who, after keeping her till the season began, sent her down to Croydon on the 2d of October. When she got into the field, however, she did not come up to the expectations formed of her; for she was very hot, and jumped at some fences long before she reached them, and rushed in a headlong way through others, as if she was ignorant of their existence. Upon this, Mr. Higgs got off, and remonstrated with Mr. Thrale, who was also in the field. The defendant, however, attributed the failure of the animal to the cowardice of his rider, and, mounting her himself, put her at a fence, through which she bolted as she had done before. After this the defendant dismounted also, and, scrambling through the next fence on foot, made her follow him over it "in hand," and, then turning to the plaintiff, said, "See how she can leap." Mr. Higgs, however, was by no means satisfied with his bargain, and, finding that "it was no go," sent back the mare, and, discovering that she was in fact going blind of cataract, returned her to the defendant, who ultimately sold her at Tattersall's in Mr. Higgs's name for eleven guineas. Besides these facts, it was proved that at the time of the sale the defendant said, a peculiar appearance about the "good eye" was attributable to a blow or a rub from the halter; but after

her failure in the field a veterinary surgeon pronounced her eye to be affected by cataract, and it was admitted that soon after her sale at Tattersall's she went quite blind of cataract, which must have been approaching to a crisis in August, and must also have existed for some months before that period.

Mr. Bramwell, in answer to this case, denied that any warranty had been given in respect of the eye, for it was admitted that the mare's eye was diseased or injured at the time of the sale; and he put it to the jury whether it was probable that any man would have warranted the result, while, if any warranty had been given of the soundness of the eye, the plaintiff himself, *a veterinary surgeon, who had discovered the defect, would not have returned the animal long before the trial at Croydon.* As to the warranty of her qualifications as a hunter, it was admitted to have been given, and evidence was gone into to shew that the commendations bestowed on her were well deserved; the result of the day with the hounds at Croydon being attributed by the defendant to the combined operation of the mare's fiery freshness at the opening of the season and the cowardice of the plaintiff, who could not manage her, and whose equestrian prowess was assimilated to that of the immortal Briggs. In support of this case several witnesses were called, who spoke to the character of the mare in the field and in the Paddington hunting-ground, where she did wonders over all sorts of hurdles, and proved herself "as good a hunter as ever was in the world."

The case concluded by a verdict for the plaintiff, with £25 damages.

REVIEW.

Quid sit pulchrum, quid turpe, quid utile, quid non.—Hor.

In the "Collection of Memoirs and Observations on (French) Military Veterinary Hygiene and Medicine," which we have so lately been engaged in examining, are contained two prize "Memoirs," one on Farcy, the other on Typhoid Affections in Horses*. On the latter of these we would make a few remarks, if it were only for the reason of shewing what is meant to be understood by such imposing titles.

* The reader will find an article on Typhus Fever, but in an *enzootic* form, in "The Veterinarian," vol. xxii, p. 462.

Typhus and *typhoid* are words but rarely heard in our own country in connexion with veterinary, or at least with hippiatric, medicine. Our old writers on farriery described fevers in horses as *hectic, intermitting, continual, malignant,* and *pestilential*; but Coleman exploded such doctrine, shutting out fever altogether from veterinary pathology. By degrees, however, even during Coleman's reign, in the face of his *ex cathedrâ* exclusion, has fever been again creeping into our nosology. Nay, by many of the contemporaries of Coleman who had sprung out of the old school of farriery, never indeed had fever in horses been discarded. Still the Colemanites soon becoming more powerful in number and importance, and more medically learned as a body than the remnants of the old school, put to silence the fever doctrine; and no more was heard about it until certain members of the new school, from sheer opposition and experience, became convinced of the reality of what Coleman had denied to exist, and once again introduced fever into our veterinary nosology. It was said that the horse was, most unquestionably, on occasions, the subject of fever, and of fever in two forms, *idiopathic* as well as *symptomatic.* And here the matter seemed to end. No mention was made of any other description of fever. Still, among the descendants from the school of farriery there was another fever spoken of—a fever altogether of a different type from those recognised afresh, and to which, from its prominent character and evident tendency, they gave the name of *low fever.* This was no other than a *typhoid* affection. Although, however, it may from this undeniable fact be argued that veterinary science in our own country has never been without representatives who have acknowledged the existence of fever in both its *high* and *low* forms; still, is it equally a fact, one fairly inferrible from French and English writers on horse medicine, that either typhoid fevers are more common among horses on the continent than in Britain, or that French veterinarians are much narrower observers of the maladies of horses than we are. With a " memoir" on the subject in question before us, and particularly as this professes to exhibit no more than a plain narrative of the symptoms, causes, treatment, &c. of " typhoid affections," it will be in our power, by the translation of certain passages into our own pages, to enable our veterinary

readers to determine for themselves how often, or in what comparative numbers, cases of the kind present themselves within their several spheres of practice and observation.

French veterinarians give the name of *typhoid affections* to such continued severe fevers as, appearing under the sporadic, enzootic, or epizootic forms, are marked by a particular kind of stupor, by lesion, more or less observable, of the gastro-intestinal mucous lining, and frequently by an eruption of iaflammatory or gangrenous tumours, either spontaneous or the result of contagion. And they make a division of such affections into,

1. Typhoid fever.
2. Putrid or malignant fever.

Typhus Fever,

A disease touching which we (the Author) are in possession of but few observations, and one that has been, and still is, in our opinion, mistaken for and confounded with, either enteritis or gastro-enteritis, in cases, for example, in which its consequences are of little importance; though, perhaps, with putrid fever, when, on the other hand, malignant and exhibiting extraordinary violence, its progress is rapid and its termination fatal.

In its most benignant form, typhus fever, indeed, bears so great a resemblance to pure inflammation of the primary intestinal passages, that it is often difficult, very difficult, even to distinguish them.

As for the cause which occasions it to be confounded with putrid fever, it is no matter of astonishment to us, since in our opinion one fever possesses in many respects so great an analogy with the other; whilst typhus itself, through causes which remain latent up to the present hour, is, like the gastro-enteritis of 1825, dangerous, fatal, and epizootic.

In general, typhus fever begins without any warning; though there are times in which its approach is marked by dulness and weakness, and a manifestation of being easily fatigued, sweating through little exertion, &c. with loss of appetite.

Of the first stage, the most remarkable symptoms are—either a yellow redness of the pituitary membrane, or a dryness,

or a discharge of viscous matter which adheres in thick incrustations around the alæ of the nostrils, with, occasionally, an appearance of drops of blood. The nostrils are more or less dilated; the respiration more or less frequent, according to the sharpness of the abdominal pains or the existence of a lamentable complication of thoracic with abdominal disease. The ear applied to the windpipe or to the walls of the thorax almost always detects a well-marked mucous râle; also there is cough, with full, strong, and frequent pulse.

In the second stage, the mouth becomes dry, and sometimes displays aphthæ or cracks of some depth. The tongue is red about its point and along its sides, but its middle and base are of a deep yellow tint. The breath is tainted. When abdominal symptoms are present, which is not always the case, they are sufficiently well marked. The dung is either very hard, or it is, more commonly, liquid; sometimes it is bloody, and issues a fœtid odour; the debility frequently being such at this period as to cause constant opening of the anus. The pituitary membrane is dry, and covered with bloody points. The conjunctive membrane is reddened and infiltrated, and, like the pituitary, presents petechial patches. The pulse has not its force and fulness, &c. &c. Some veterinarians have remarked at this period upon the insides of the thighs those little transparent vesicles to which the name of *sudamina* has been given. Urine scanty, possessing a remarkable fetor, and voided occasionally with great pain. Great dejection, and occasionally stupor; and, ordinarily, at this period it is that the ataxic or adynamic symptoms set in.

In the third stage, the parotids tumefy and ulcerate; and any setons or rowels that may have been introduced, or blisters, become so many causes of mortification of the parts in which they have been applied. And now, the mouth becomes quite dried up; the tongue acquires a horny feel and turns brown; the gums and teeth are covered with a dingy slime. Epistaxis, which mostly appears during the inflammatory stage, now returns. The pulse becomes irregular, and more and more feeble. Œdema, sometimes considerable, of the extremities. Great debility. The temperature of the body sinks. The neck, belly, flanks, axilla and groins, become covered with cold and clammy sweats; the tympanitis increases; the

evacuation being bloody, and fœtid to a remarkable degree. The animal, continually in pain, exhibits symptoms of colic, often seeking to lie down, but if he does he soon rises again. Respiration greatly accelerated; nostrils widely dilated. Pulsation of the heart tumultuous. At length, beginning to stagger, he falls, either to die an easy death, or to expire amid agonizing convulsions.

Whenever, however, recovery in place of death follows, such symptoms as we have last detailed do not occur, or with modified force and character.

When blood has been drawn for experiment under such circumstances, at a time when adynamic and biliary symptoms prevailed, it has been found to contain but little hematosine, but, on the contrary, a large proportion of serum of a light *greenish* hue.

THE DISEASE MAY LAST from four, seven or eight, to thirty days.

RELAPSE is extremely likely, even under every prospect of convalescence, unless great care be taken.

THE DIAGNOSTIC at the commencement is difficult, even impossible, when the characteristic symptoms are but scantily and imperfectly developed.

The affections whose symptoms most resemble those of the disease before us are phlegmasiæ of the intestinal tube, and in particular of the brain. Should *sudamina* be detected, they are, as in human medicine, to be regarded as definitely characteristic of typhoid fever.

PROGNOSTIC for the most part unfavourable; and the more so according as the nervous accompaniments are more numerous, more violent, and more early in shewing themselves: the stupor great, the strength failing more, the pulse faltering, the diarrhœa greater, more bloody and fetid, &c.

OUR ETIOLOGY is all at fault. In truth, we know not the determining causes of typhus.

THE POST-MORTEM STATES are by no means agreed upon by those who have reported them. Most agree that the digestive canal exhibits the most constant and marked symptoms of disorder.

The Mouth presents marks of inflammation, and on occasions aphthæ or ulcerations, though commonly too superficial to destroy the lining membrane.

The pharynx sometimes the same as the mouth; at others nothing.

The Stomach is frequently the seat of inflammation of a marked character.

The Intestines also reddened to more or less extent. The cavity of the peritoneum containing a citron-coloured fluid, reddened perhaps, the omentum being at times almost entirely destroyed. A liquid matter, a sort of bloody corruption of more or less consistence, is often found within the cavities of the small guts; and in those of the large—the cæcum and colon in particular—are sometimes to be remarked red and black spots or *ecchymoses;* buds of smaller or larger size *(glandes de Bruner)* indistinctly planted over the mucous surface, &c.

Malignant or Putrid Typhus.

(*Typhus Charbonneux.*)

These malignant or putrid affections, either constitutional, or, in some instances, but local in their origin, ever of a highly acute nature and of unequalled rapidity of progress, since not infrequently they cause death in a few hours, are of the more consequence for us to become acquainted with, as they are not only susceptible of being communicated from one animal to another, but even from animal to man, in whom, losing none of their malignity, they are likewise most commonly mortal.

Frequently sporadic, sometimes epizootic, but most commonly enzootic, these diseases at time assume so redoubtable a form that nothing can arrest their progress. Invading farms or other extensive localities, they produce therein terrific ravages. For, being susceptible under various forms, almost equally fatal one with another, of prostrating a vast number of animals of the same or different species, these affections determine, under varying circumstances, losses which on occasions desolate and completely ruin the country where they have broken out.

Such are the two especial forms of typhus fever which have been observed among horse kind; one of which would seem to occur at times in practice without being sufficiently heeded or recognised by veterinary surgeons in this country; while the other may be said to comprehend those malignant epidemics by which our cattle, if not our horses, have of late years been too fearfully

visited.—For further and ampler information on subjects so vitally interesting to us all, we must refer our readers to the volumes from which we extract these imperfect accounts.

Les Mémoires et Observations sur l'Hygiène et la Médécine Vétérinaires Militaires, published last February at Paris.

Foreign Extracts.

Bulletin of the National and Central Society of Veterinary Medicine of France.

New and Important Views of the Production of Glanders.

At the sitting of the Society of the 8th March, 1849, M. H. Bouley submitted,

I. That glanders is a spontaneous disease only with the horse species; it being, in other animals, always the result of contagion. That in the horse species it may be the result of contagion; but that commonly it is a product of disordered and perverted nutritive action in the system, and, consequently, is in its origin peculiar to the horse species.

II. That this exclusive generative faculty is coincident with the exclusive uses to which horses are put; the horse being that vital machine which is employed for moving great weights or overcoming great resistance.

III. Oxen in some localities are likewise so employed; but then they do their work always at a tardy pace, so slow, indeed, that it does not interfere with rumination; while horses, on the contrary, almost always work with more rapidity, and oftentimes are compelled to carry great weights at the same rapid pace. And, moreover, the horse, nervous and excitable by nature, freely gives himself up to such rapid movements, expending thereby so much more strength in any given time than the bullock in his slow movement.

IV. Excess of such kind of labour appears to be one of the causes of the horse's *deterioration* and *wearing out*. And so glanders, viewed as the result of action in the living organ, is nothing more, in a great number of cases, than the effect of exhaustion induced by labour to which the powers of the animal were inadequate.

V. But how does this excessive work produce exhaustion and premature wearing out of the machine? Modern science furnishes

us with an answer to this question of a more precise and satisfactory description than formerly could have been given.

VI. Animal life is sustained through veritable combustion. Pulmonary exhalation proves this. The air expired from the lung contains the products of combustion, carbonic acid and water. The combustible matter entering into the constitution of the organism is therein incessantly separated and eliminated through the agency of the affinity of the oxygen absorbed upon the pulmonary surface. It is the same with the incombustible matter, azote; that being separated from its various combinations whenever the oxygen exerted its affinity, and becoming eliminated through the urinary passages.

The effect of the air, then, introduced into the system through the respiratory passages, is incessantly to destroy organic combinations, eliminate the products: those in a state of combustion, carbonic acid and water, through the lungs and skin; those incombustible, azotic matters, separated from the blood in the form of *urea*, through the urinary channels. The oxygen of the air is continually producing combustion and decomposition of the living animal fibre.

VII. This action of combustion and decomposition is the more potent the more the acts of respiration and circulation are accelerated, and the contact of the air with the blood becomes, in consequence, the oftener repeated.

Work cannot be performed without the acts of respiration and the pulsations of the heart becoming more energetic, and proportionably so with the speed and intensity of the work; the consequence of which is, to bring the organic fibre oftener into the presence of oxygen, and so to hasten combustion and decomposition.

Chemical analysis shews that the products of combustion, exhaled through the skin and lungs, after a rapid course are considerably augmented; consequently, decomposition becomes augmented under such circumstances. I pass over, in this estimate of the causes of wear and tear in the animal machine, the nervous exhaustion consequent on muscular contraction, because, although I attach great importance to them, in this discussion they are not necessary for my demonstration.

VIII. The orgasm is opposed to this oxydation:—

1st. By virtue of the innate force of cohesion existing between its component particles, a force which for a certain time is able to counteract the affinity resulting from the action of oxygen.

2dly. And especially through the continually renewed influence of the aliments introduced in sufficient quantity into the digestive apparatus for furnishing the living tissue with the elements proper

for its reparation, and the oxygen of the air with combustible matters fit for the development and completion of its affinities, and through combination with it, for the production of the required animal heat.

IX. But if, while we are exacting continually from the animal machine a large demand of strength—which, as I said before, entails the introduction of a considerable quantity of atmospheric air into the air passages—we do not afford a sufficient supply of alimentary substance, that is to say, of azotic and combustible matters, the oxygen may exert its affinities on the matter actually composing the organs themselves, determining a rapid decomposition, and finally producing with the azotic matter a new principle endowed with powerful novel affinities, expediting by its presence the decomposition of the orgasm, and discovering itself during life by that cohort of symptoms and derangements which characterise glanders.

This active principle, the result of the extreme *oxydation* of the system, analogous in its origin and progress to ferments, is glandered virus.

I am, indeed, struck with the analogy existing between the mode of generation of glandered ferment in the living body, under the influence of the oxygen of the air, and ferments which are concocted without vitality through the affinities of this same gas.

Without entering here into the complex theory of the phenomenon of fermentation, I establish through modern chemistry this fact, viz., that it becomes necessary for the development of fermentation, no matter under what conditions, that azotic matter and the oxygen of the air should be brought together; that once fermentation developed, the ferment cannot generate and augment its volume but through the intervention of an azotic matter, which it assimilates after the manner of the animal process, and transforms into its own substance; and, lastly, that all fermentable matter will become, in the presence of a ferment, under certain conditions of temperature and moisture, decomposed, and resolved into more simple combinations.

Now, may we not admit that, in the vital orgasm, azotic matter, continually coming into contact with the oxygen of the air, may become converted into a peculiar ferment, the same as we behold in the dead body, the organic substance turning into putrid ferment through the combined action of air and water and moderate heat? There is an approximation here which has something specious about it.

Once produced, in whatever way it may be generated, glandered ferment, it is certain, is accompanied by ulterior phenomena in the system which bear the closest analogy to those of recognised fer-

mentation. Placed in contact with matter capable of feeding it, the glandered principle assimilates it, and greatly hastens the organic decompositions. In fact, chemical analysis seems to demonstrate that the exhalation of carbonic acid is much more considerable in an animal under the influence of glandered fermentation than, if I may be allowed the expression, in an animal in health. Such is the theory: let us now consider the facts.

X. Experience has shewn, and every day still shews, that incessant work, without rest, such as is exacted of horses in certain undertakings, is one of the most frequent causes of glanders, acute and chronic, but principally of acute. No discussion, I should imagine, will arise on this point, it being an acknowledged fact set forth every year in the *comptes rendus* of the Alfort School.

It is no less certain that in the greatest number of cases, whenever a horse becomes glandered from over work, it falls greatly off in condition before the disease makes its appearance; a fact which accords with the great exhalation of carbonic acid and water, the fatal consequences of the activity of the respiratory and circulatory functions.

On the other hand, whenever glanders has declared itself, the horse rapidly falls off—he becomes a *dog-horse*—and this disappearance of his fat coincides with the augmented exhalation of carbonic acid, which becomes remarkable at the period of eruptive and acute glanders.

Another fact is, that the influence of excessive work may be counteracted, and even rendered harmless, by a large reparative alimentation. Demonstrative experience of this passed under our eyes, on a very extensive scale too, on the occasion of the construction of the fortifications of Paris. The horses worked hard in draught became glandered or not, according as they belonged to masters who could afford to (and did) keep them well or not. Most of the glandered horses were the property of unfortunate piece-workers (*tâcherons*) knowing little of the management of horses, and too parsimonious of their feed; while, on the other hand, the disease spared such as were well fed by wealthy contractors undertaking the work on their own account.

XI. The labouring ox is not subject, on account of being worked up, to any disease having the least analogy with glanders. Not to notice his difference of organization, which is a principal consideration in this question, I contend that the difference of results from the same cause in the bullock and the horse is owing to the modes of using them, to the constant slowness of pace of the one, and the occasional and frequent rapidity of that of the other. This difference may cease to exist whenever the ox is forced into quick work, and especially should he be fat at the time. In such condition, under

the influence of hurried respiration, oxydation of the combustible elements takes place with so great rapidity that the exhalation of the carbonic acid product cannot get vent with sufficient celerity, and the consequence is, the animal dies asphyxiated, or *charbonneux.* In this case, a new principle, a ferment, becomes generated in his blood, under the influence of extreme oxydation.

XII. I am not to be supposed to admit that in every case glanders is the result of *extreme oxydation.* I reserve this interpretation for one cause alone of the disease, viz., for over-work.

Most certainly I admit that other causes are in operation among our cavalry; and yet, whenever work does affect troop horses, and that not infrequently happens, its influence becomes the more marked according as the horses are ill-fed or fed on forage of bad quality.

Assuredly I do not find fault with the amelioration produced in cavalry barracks of late years; but I contend that, for this measure to yield all the fruits to be expected from it, we ought to augment the quantity and better the quality of the rations of food in proportion as we augment and improve the air furnished the horses for respiration: it being an undeniable physiological fact, that the demands of reparation are so much the more active according as the respired air is dense and more vitalizing—in a word, more combustible.

XIII. I approach, next, the question of

The Contagion of Glanders.

In practice, glanders ought by all to be considered as a contagious disease. Everybody admits it to be so *in the acute form.*

Is glanders, then, contagious in its *chronic* form? Some affirm that it is; the greater number deny it. On this point great divergence of opinion and facts have led to interminable discussions, on account of the parties opposed reciprocally adducing facts apparently incontestible in their authenticity. How are such to be reconciled? That now is easy, since the cause of their divergence has come to be discovered.

Glanders in the form called *chronic* is a disease but ill defined by symptoms. It continually oscillates, if I may so express myself, between the chronic stage, as denoted by the ancientness of the lesions set up in consequence of the disease in the orgasm; and the acute stage, which is displayed by intermittence under the influence of a multitude of occasional causes, and keeps adding fresh lesions to the old ones.

In other words, chronic glanders predisposes the orgasm it has invaded to acute glanders.

This predisposition is such that we are able, at will even, and through an experimental course, to convert into the acute stage chronic glanders, well characterized and defined as such by its symptoms.

Arouse, for example, in a horse affected with chronic glanders, an intense fever, either by performing a surgical operation upon him or in any other way, such as traumatic lesion in some sensitive part, or by administering some corrosive poison, such as sublimate, and it is nine to one but glanders resumes its acute form under the influence of the febrile commotion. M. Renault and myself have made this experiment at the College, not once only, but perhaps a hundred times, and have uniformly announced to the pupils the results. And what has proved remarkable is, that the glanders, which in the chronic form had no power of transmitting the disease by inoculation, acquired this property as soon as, received as it were by the fever excited, it had assumed the acute form.

This is an important fact, affording a key to difficulties which have presented themselves to inquirers into the contagious properties of glanders in its chronic form. The reason is, that the disease is not fixed under this form, and that, changing its nature, it all at once acquires the external characters and properties of acute glanders. For this, in practice, it suffices that the functions be temporarily disordered, that the work be augmented or accelerated, that the harness gall, and there be a small wound from a nail, &c. Any cause, indeed, which may operate in disturbing the organic functions in an animal having chronic glanders is liable to produce eruption of the acute.

To give one example among a thousand:—In 1816, an English bred mare, still young, and very fast in her paces, was given up to the College on account of chronic glanders. One night I drove this animal in a tilbury nearly seven miles in twenty minutes, being at the rate of nearly twenty-one miles an hour. On reaching the College gates the mare fell exhausted; the following morning she shewed symptoms of nascent acute glanders, and some days afterwards had the disease fully developed, and died of it. The autopsy displayed every charcteristic lesion.

This striking example of what I have advanced is realized often in practice, when horses affected with chronic glanders are taken to work; and instances of contagion of this kind, which we regard as demonstrations of the contagious properties of chronic glanders, so called, is nothing else but an example of contagion of acute glanders masked under outward appearances.

To give an authentic example of this:—Some years ago a man of

property, of the environs of Alfort, brought to the College a valuable horse, to have treated for a disease of the foot. The treatment occupying several weeks, he bought a horse to use during the time in his place. The fresh purchase had enlarged glands at the time, and afterwards turned glandered. The owner was ignorant of this at the period of the return of his cured horse from College, and put him up by the side of the other, and for some time worked the two together. The new purchase became glandered after a doubtful form, it being neither defined acute nor chronic, as does happen sometimes at the latter stages, when we expect to recognize well-marked chronic glanders. M. Prudhomme and myself examined the old horse with whom the other had cohabited and worked: he presented all the symptoms of well-marked chronic glanders. Here, evidently, was a case of contagion of chronic glanders: nevertheless, the observation was not complete without the autopsy. I had the glandered horse destroyed immediately. His lungs and upper nasal passages displayed unequivocal tests of acute glanders.

How many facts related of chronic glanders are there identical with this one! What conclusion shall we draw from this? Why, that, in practice, glanders ought to be viewed as a contagious disease; since so often acute glanders, which all the world regards as contagious, is cloaked under the chronic guise. So that, henceforth, if the question is to be discussed, it must be *theoretically:* the *practical* question being set at rest, admits of no further discussion.—*Recueil de Méd. Vét. Aug. and Sept.* 1849.

*** An interesting discussion followed this novel and ingenious exposition of the nature of the virus and contagion of glanders, which we shall look over at another time.—ED. VET.

At the sitting of the Society of the 8th November, 1849, announcements were made of the receipt of letters from—

1. Mr. Percivall, veterinary surgeon to the Queen's Body Guard, thanking the society for conferring upon him the honour of Corresponding Member.
2. Mr. Field, veterinary surgeon, London, to the same purport.
3. Mr. Morton, Professor of Chemistry at the Veterinary College of London, to the same purport.

Also of the receipt of M. Goux's "Memoir on Castration," which has been translated into The VETERINARIAN.

Home Extracts.

On the Management of the Farm Horse.

By W. C. Spooner.

(Concluded from page 182.)

Having now gone through the various articles of food, and given their theoretical value according to the amount of nutriment contained, a mode of estimating which I believe to be correct, and consistent with the results of practice, so far as with our imperfect data these results can be arrived at, I proceed to give some actual statements of the feeding of farm-horses, derived from personal knowledge of the cases in question. On a clay-loam farm in a good state of cultivation where the horses are in good condition, and the work, though regular, yet harder than usual, particularly during seed time, and where two horses only are used in a plough, the following is the mode of feeding:—

During the dead of the winter, between wheat and spring sowing, commencing about the middle of November, and terminating in March, the horses are only allowed a bushel and a half of oats each, with barley-straw *ad libitum;* with this small quantity of oats a large amount of straw is consumed, amounting to 37 lbs. daily. The horses are not, as in many instances, sent some miles into a neighbouring town for the purpose of bringing out a load of inferior dung, but are more usefully employed at home. On this farm, straw is plentiful and of the best kind, being well intermixed with clover, whilst hay is scarce, being required for sheep and cattle. The work at this period of the year is also very light. The cost of this feeding may be considered to be per week:—

	s.	*d.*
Oats 1½ bushel	4	6
Straw 1¾ cwt. at 2*s.*	3	6
Swedes 42 lbs.	0	4
	8	4

As the work of spring comes on, the feeding is gradually improved till it reaches—

	s.	*d.*
Oats 2 bushels	6	0
Beans 1½ pecks	2	3
Hay, not being clover, about 1 cwt. .	4	0
	12	3 per week.

Barley and turnip sowing being pretty well over, and green food becoming abundant, and the work light,—

	s.
The corn is reduced to one bushel . .	3
Green food *ad libitum*, which is very difficult to value, but say	5
Making per week	8

As the wheat-sowing approaches, the same feeding is given as in the spring, costing, as then, 12*s.* 3*d.* per week.

				s.	*d.*	
Thus we have for	3	months	the weekly expense of	8	4	per week.
„	3	ditto	ditto .	12	3	„
„	3	ditto	ditto .	8	0	„
„	3	diito	ditto .	12	3	„
				£2	0	10
			Averaging per week . .	10	2½	

Or £25 8*s.* 8*d.* per annum.

This amount varies, of course, with the value of oats and other provender, and is more frequently below than above the estimate I have given. The horses thus fed are kept in good condition, and are able and willing to perform any work they are required to do. Of course, there is some variation as to the time at which these changes of feeding begin or end, according to various circumstances: green-food, for instance, usually lasts a month or two longer than the time above stated, but the difference of expense is not material.

On another farm the following is the system of feeding adopted:—

		s.	*d.*
13 weeks on	1½ bushel of oats . .	4	6
	2 pecks of beans . .	3	0
	1½ cwt. of hay . .	6	0
		13	6
13 weeks on	2½ bushels of pollard .	2	1½
	2 pecks of bruised beans .	3	0
	Straw . . .	1	9
	70 lbs of swedes . .	0	8
		7	6½

13 weeks on	2½ bushels of pollard . .	3	1½
	2 pecks of bruised beans .	3	0
	1½ cwt. of hay . .	6	0
		12	1½
13 weeks on	2 bushels of bran . .	2	0
	1 peck of beans . .	1	6
	Cut clover, tares, and pasture	4	6
		8	0

The objection to this mode of feeding arises from that which I have before pointed out, viz., that bran and beans do not supply the constituents of oats, which the horse requires.

Another method of feeding adopted by another party is the following:—

		s.	*d.*
13 weeks on	1½ bushel of oats . .	4	6
	1 peck of beans . .	1	6
	1 cwt. of hay . . .	4	0
		10	0
13 weeks on	2 bushels of oats . .	6	0
	1 peck of beans . .	1	6
	1 cwt. of hay . . .	4	0
		11	6
13 weeks on	1 bushel of oats . .	3	0
	Clover, vetches, &c. .	5	0
		8	0
13 weeks on	1 bushel of oats . .	3	0
	Clover	4	0
		7	0

This statement of feeding is preferable in its arrangement to that previously described, but is still insufficient in point of nourishment for horses in full work, and is calculated to keep them under *par*. The first statement of horse-feeding, though more expensive, yet considering the condition of the animals,

and the amount of work accomplished, is in the end the most economical*.

With regard to the medical treatment of horses, it should be borne in mind that "Prevention is better than a cure," and, to use an old saying, "a stitch in time saves nine." To follow out these homely yet wise old proverbs, there is no better plan than to select a respectable and certificated veterinary surgeon, and pay him a moderate annual composition to attend and find medicines for all the horses on the farm. There is no more dangerous plan than that very frequently pursued of employing the village farrier to attend slight illnesses, with the intention of calling in a veterinary surgeon in difficult and dangerous cases. It requires all the tact and talent of a professional man to discriminate between slight and dangerous disease; for the latter often assumes symptoms so masked and obscure, as to require the utmost knowledge and experience to detect, and the unwary, in many instances, may consider the animal in little danger when he may absolutely be in the jaws of death. Now, surely if the ignorant man is incompetent to treat an obscure and dangerous case, he is also unable to distinguish between such a case and one unattended with danger, and yet it is he or the farmer himself that must decide on the character of the case, and the propriety of seeking further advice. The writer has known several instances in which the farrier has confidently foretold the recovery of the horse when he has absolutely been in a dying state. One instance is very familiar to his recollection, in which the farrier arrived post haste, and almost without condescending to examine into the symptoms, immediately put into practice his round of remedies, *bleeding, blistering, rowelling, and clystering,* and then resting from his labours in a corner of the stable, whistled complacently, and foretold the speedy recovery of the animal. The words had scarcely issued from his mouth, when the poor brute, that had been dying all the time he had been thus needlessly tortured, fell forward, and with one severe struggle expired.

The advantages in favour of compounding on the principle of insurance for the medical attendance of farm-horses are various: disease may be often prevented by early attention, dangerous disorders may be checked in the bud, and severe or incurable illness or lameness may thus be prevented. Medicines, with proper directions, may be left, so as to be administered immediately in

* An excellent addition to this is to give every Saturday night a large bran-mash, in which an ounce, each, should be mixed of nitre and sulphur. Every sportsman knows the value of a warm mash to his hunter after a hard day's fox chase; and if given to a cart-horse after heavy road-work, it will be found equally advantageous.—F. Burke.

sudden cases, as, for instance, in spasmodic colic; and thus the interest of the farmer and the veterinary surgeon may both tend towards one and the same object, i. e., the prevention of disease. If any epidemic should break out (the horses being contracted for), the expense of treatment is moderate and limited, which is so much the better for the farmer; and if the horses should continue free from disease, it is so much the better for both parties.

With regard to the stabling of farm-horses, it should be comfortable without being too hot, and well ventilated without being draughty. Means should be afforded at the upper part of the stable (but not just over the horses' heads) for the exit of the heated and impure air, and if this be done we need not trouble ourselves about affording inlets for the pure and cool air; it will enter quickly enough we may depend on it. In addition to ventilation there ought to be sufficient light afforded by means of windows, which should be made to open, so as to be used in summer for keeping the stable cool. They should, however, be provided with shutters, or lattices, to exclude the light. For after horses have been hard worked during a long summer's day, the sooner the stable is darkened, after being dressed and fed, the better, so as to induce them to lie down and go to rest.

It is a very bad and thriftless economy in building a new stable to stint the room afforded to each horse. A dozen horses may be rendered uncomfortable and unable to take their proper rest, merely for the sake of making the stable hold one additional animal. Where full-sized horses are kept, six feet in width should be allowed to each, and stalls* should by all means be preferred where practicable. There are few persons who have been much used to horses but who can call to their recollection broken legs or other fatal accidents arising from the want of separation between each horse. Besides which, no two animals feed alike—some are slow, others are quick and ravenous. By feeding indiscriminately the former is robbed of his corn, and the latter is rendered still more ravenous by the hope of getting some of his neighbour's, and consequently does not properly digest his food, and thus both animals are injured. Another evil also arises from this faulty system. One of the earliest symptoms of the majority of internal diseases is a loss or failure of the appetite. If horses are fed in separate stalls, the carter can at once discover

* I prefer a loose box for each horse, or each pair of horses, with a small open yard attached, in which a trough for water should be fixed. The door from the box into the yard may be closed whenever it is expedient to do so. —PORTMAN.

a horse who is off his feed; but when fed from the same manger, the gross feeders will take care not to leave any corn behind. Many horses fall off in their feeding, on hard work, from constitutional delicacy, without being at the same time in ill health; but if a handful of salt be sprinkled among his oats, it is inconceivable how much it will coax his appetite. The best situation for the racks and mangers is on a level with each other, the upper part being about 3½ feet from the ground. The racks, however, should not go down to the ground, and should be only large enough to hold about 20 lbs. of hay.

The best material, particularly for the mangers, is iron, which in the end will be found the cheapest as well as the cleanest.

The stall should be about nine feet in length, and the lowest part five feet in height. Where full-sized stalls cannot be given, quarter stalls separating the mangers, and a few feet further back, may be used as substitutes. They will serve to prevent one horse robbing another of his food, and will also economise room, and prevent biting, but they will not secure one animal from being kicked by another. When these short stalls are used, there should always be a full-sized stall at each end of the stable, into which a vicious horse can be put. With regard to the flooring of cart-stables, it should consist either of brick or wood. The latter is the cleanest and makes the warmest layer, but it should consist of oak-blocks or very hard wood, to prevent the absorption of moisture. From the great abundance of timber in the north of Europe, the stalls are mostly planked, and, in well-built stables, the lower part of the boarding is slightly grooved, to carry off the urine—this both for horses and working oxen; the latter of which are there never provided with litter. The pavement may be laid with a gentle declivity of about two inches from the front to the back part of the stall, and gratings should be placed behind for the passage of the urine into an underground drain, conveying it to the tank or manure heap. With regard to the litter, it is well to remove the droppings from the horses much oftener than is generally done, and not to allow them to tread on them. By so doing, much litter is saved, and cleanliness and health promoted. It is also an excellent plan to scatter powdered burnt gypsum on the floor of the stable two or three times a-week. The expense is trivial, and will be entirely repaid by the retention of much of the ammonia of the urine, whilst the floor behind the horses will appear as clean as a new hearth-stone. If the floor of the stable be bricked, it is also a very good plan to wash it out occasionally with water saturated with gypsum.

Having now gone through the various branches of our subject,

I must conclude with the hope that what has been written may in some slight degree tend to the improvement of the breed, the comfort, and the management of the noblest of domesticated animals; believing that these ends may be accomplished, not only without any pecuniary sacrifice, but with decided advantage to the agricultural community.

THE VETERINARIAN, APRIL 1, 1850.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

DIFFERENCES and varieties in the shapes of horses' feet, as well as in the forms of their bodies, have naturally attracted the attention of those who have devoted their minds to the observation and study of animals from the earliest periods of time; but we are not sure that such differences and varieties of figure have been by any writer compared or contrasted, or that one has been pointed out to be attendant or consequent upon the other. To Mr. Hodgson, we believe, we are indebted for supplying this interesting link in physiological connexion between body and foot; and the concatenation is one not less curious than it is inviting to the veterinary philosopher. We all know that colts bred or reared in certain countries or pastures are apt to have feet of a certain kind, and that breed as well as situation has an influence in this way; but it has not, to our knowledge, been noticed that conformation of body denotes a certain contour of hoof; in other words, that what we call the *spread* or *shelving* of the hoof is regulated by the turning in or out of the toes, and the action resulting from such position or structure of fore limb.

Bracy Clark has very naturally represented the spread upon the *outer* quarter—in his frontispiece of the Natural Foot of the Horse, in his "Hippodonomia"—and has found fault with Coleman and others for calling this part of the foot *circular* or *round*.

Goodwin aptly observes, in his "New System of Shoeing," that, "to take the form of the foot correctly, we must strip it of its exuberant or superfluous parts, the same as one would pare the superabundant growth off our own nails." And that "the neglect of

this necessary preparative has led to considerable difference of opinion about the natural, healthy, or true form of the ground surface of the foot." Further, that "Bracy Clark's (frontispiece) natural foot is one with *great spread* to it, much of which the smith would find it necessary to deprive it of, *even on the first shoeing;* and the protuberance of the *outer quarter* (which Bracy Clark points out as an attribute of health) being *wholly owing to the spread,* will, of course, disappear with the annihilation of the spread."

We learn from Percivall, in his "Anatomy of the Horse," at p. 420, that "by the *spread* is meant the inclination the hoof manifests, when left unshod, around the toe and sides, to bulge or protrude at bottom, whereby its ground-surface becomes augmented, particularly around the *outer* quarter. To a certain extent this is worthy of observation; although, in my opinion, it is to be regarded rather *as an effect of pressure than one of abstract growth.*"

It will not escape our reader's notice here, that the spread or protuberance of the ground-surface of the hoof is referred to the "outer quarter," and to that alone, and that no mention whatever is made of any spread or protuberance of the *inner* quarter; much less of what *gives rise to the spread,* save in such general terms as afford no clue whatever to the scientific and satisfactory explanation now for the first time given of the phenomenon by Mr. Hodgson. What this gentleman's opinions are in regard to it will best be apprehended by the perusal of his paper on the subject; the novel or leading features of which—those commanding our chief inquiry—appear to us to be reducible to the following propositions:—

1. That the form of the foot is regulated by that of the body of the horse. (Including in this, the position and action of the fore limb.)

2. That however modified the form of the foot, yet has it certain definable proportions, wherefrom rules may be laid down defining the extent and thickness of its horny covering at any determinate point.

3. That it is the cone-figure or shelving of the foot that produces the modifications in its shape; and this appears to operate through the sole, influenced by the weight abutting against that particular

part of the crust at which the spread is observed, by its causing a gradual shelving-out and augmented growth of the hoof at this part.

4. That in the well-formed foot, in a state of nature, there is always some degree of spread or shelving upon the *outer* quarter.

5. That, on the contrary, the spread or shelving will sometimes be found on the *inner* quarter; while the outer quarter has the appearance of being "misshapen" or "contracted."

6. That not only the shape but the *size* and *kind* of the foot will be in consonance with the horse's form (or particular make) and action: hence to the less amount of weight they have to support may we attribute the differences between the shapes of the hind and fore feet. By the same rule do likewise the hoofs of the ass, mule, and zebra, differ in shape from that of the horse.

These are the notions conveyed to our mind by Mr. Hodgson's paper, as being those which have not hitherto been developed to the extent and in the shape he has now set them forth. The associations admit of ready recognition if founded, as said to be, upon the broad basis of observation. Horse's feet are open to everybody's inspection; and though the drawing-knife, aided by the fettering caused by the nails to outward growth, has, in too many of them, owing to the length of time such agents have been antagonizing Nature's operations, obliterated all, or nearly all, demonstrable *spread*, yet will sufficient marks of *shelving* probably remain upon the wall to enable us to say, without lifting the foot, on which quarter the spread inclines, and whereabouts, were growth of hoof permitted to proceed, it would most certainly develop itself. This point being ascertained, we have only to institute a comparison between the shape and quality of the hoof and the contour and action of the limb, to feel convinced of the reason and truth of Mr. Hodgson's new views concerning the economy of horses' (and other animals') feet.—In closing this notice, we may inform those who partake of our own interest in such matters, that Mr. Hodgson has made a collection of small woodcuts, illustrative of the foregoing doctrines, which he has most kindly sent to us; and we should feel pleasure in shewing and explaining the same, to the best of our ability, to any veterinarian honouring us with a call.

On the subject of discrepancy of professional evidence in courts of law, one question still remains unanimadverted upon, and that perhaps the most important question of all, viz., the question of constitutional soundness, so far as it has reference to pulmonic disease. A gentleman resident in the country, in want of a horse, comes to London to seek for one; and after going the usual round of the metropolitan dealers' yards, fixes upon one, and makes purchase of him. The horse is said to be "five years old," and "warranted sound;" is sleek in his coat; fat upon his rib; full of courage; and, withal, "quiet to ride and quiet in harness." In the same blooming condition in which he quitted the dealer's warm and comfortable stable he arrives in the more open and airy one of his fresh master, who, being desirous to test his new property, the following day rides or drives him out; in the course of which ride or drive, the animal, full of spirits, acquits himself much to the satisfaction of his master; though it is remarked at the time, "he sweats a good deal from the little exertion he has been put to;" —"owing, no doubt," it is added, "to the circumstance of his probably having done nothing but walk a few times up and down the yard, of a morning, all the while he has been in the possession of the dealer." The season of the year being the spring, and the time somewhere about that of the prevalence of north-east winds, the horse, from the sweat he has had, as might naturally be expected, "catches cold." The night of the day of trial he does not "pick up his corn" with the same appetite he did the night before; and the groom tells his master he has a "cough," though that "he had when bought;" for, continues the groom, "I heard him cough once or twice in the dealer's stable." The master, who had set his mind on another ride upon his promising new horse, felt loath to forego his anticipated pleasure; and, if he had any scruples in his mind on the prudence or propriety of taking the animal out again under present circumstances, they were speedily dissipated by the groom's assurance that "a short ride would not hurt the horse." The cough, however, during the ride, becomes so troublesome, that the rider deems it prudent to forego his pleasure, and return by the nearest road, at a foot's pace, to the stable. That night the horse's "cold" very perceptibly "increases:" he refuses his corn; cares little about mash: eating hay only, and that but sparingly; and picking

with most desire at the ears of straw scattered about his bed. His cough has grown harder and more frequent; his throat is sore; and his respiration has become disturbed, though this last alteration passes unnoticed by the groom. A "hot mash" is given him, which he turns away from; and he is made as warm and "comfortable" as possible by clothing and hand-rubbing and bandaging, and stopping up every hole and crevice through which any cold air might enter the stable, or any heated air might escape out of it. The day after, the animal's cold is "worse." The groom gives him cordials to "comfort" him; and tells his master he must not take him out to-day. Another day comes; the horse is no better. The master begins to grow uneasy about him. The groom consoles him by the assurance that "the cold must run its course." The horse continues to be "composed" by cordials, and in this manner is left to pass another night. The break of the next day, however, displays a scene in the stable which quite alarms the groom. The horse, he runs and tells his master, is "taken worse." The master bids him instantly to send for the farrier. Acute pleuro-pneumonia has set in. Five days afterwards—making the period a week from his first evincing signs of indisposition—the horse dies. The day before death a veterinary surgeon had been sent for. By this time, however, the case was hopeless, and the veterinary surgeon had told the master so: and this morning he repeats his visit but to find the animal dead. He abides, however, the post-mortem inspection.

The chest being opened, the usual relics of pleurisy present themselves. Plastic masses of effused lymph are adhering in patches to the lungs and ribs; and from them are stretching across, looking like hangings of drapery, from one to the other, ragged processes of the same; and the cavities of the chest are half or three parts filled with serous fluid (water). The lungs appear compressed by the fluid; their substance is redder than natural, and in places where the redness is greatest they manifest a normal solidity of substance. The bronchial tubes, when cut open, display likewise reddening, and contain frothy purulent matter. The farrier, who was present, now, together with the veterinary surgeon, sees ample reason in all this for pronouncing the horse's disease to have been of old date, and past cure at the time he was called in; in fact, that the animal was "rotten."

The word "rotten" opens the ears of his owner, who is also present; and understanding from it, in a subsequent conversation he holds with the farrier, that the animal must have been breeding the disease long before the time of purchase, he makes up his mind to consult with his solicitor on the matter. The legal adviser considers there are grounds for an action at law, and that these grounds are made stronger by the circumstance of the "cough," remembered by the groom to have been heard in the dealer's yard. And, as the words "warranted sound" are inserted in the receipt for the money paid for the animal, there appears every reasonable expectation of being able to recover. The action is brought; the cause tried; and the gentleman recovers the price of his lost horse on the judgment of the court,—that the horse could not have been of sound constitution at the time of purchase.

Cases, of which the above is a fair sample, occur, we regret to say, but too frequently; giving rise to a vast deal of discrepancy of opinion, not at all times confined to those who are not supposed to know any thing of pathological science, but apt to extend, we are sorry to add, to those who ought from education, and are by the public believed, to know better.

Every man acquainted with his profession knows, or ought to know, that a week affords ample time for such changes in the aspect and structure of the lungs to take place as have but just been described. The horse might have been—nay, no doubt whatever was—normally sound in his constitution at the time of sale. The cough had no more to do with his pleuro-pneumonia than a pair of skaits has to do with the death of the person who puts them on, and falls and kills himself upon the ice. The disease of which the animal died did not commence until *after* his translation into his last master's stable; and if there was any specific cause for it beyond this change of locality, it was to be found in the probationary rides. That the cough amounted to actual disease is questionable; and if it did, it afforded of itself no indication of the disease of which the horse died. It is the nature of diseases, in every animal, to run one into another, the links of the morbid chain being regulated by similarity or connexion of structure, and other circumstances; but to say that disease of one structure or organ is a part or necessary cause of disease of another with which it is sympathetically or structurally connected, and that

every part and organ in the body must incur this responsibility, is absolute nonsense. It is the same as saying, because a horse has what we call *curby* (not *curbed*) hocks—by which he means hocks of that make or shape that are predisposed to curbs—he is therefore returnable, after purchase, whenever he may chance under any circumstances to throw out a curb; or, because a horse is a crib-biter, *ergo*, if he should happen to die of a fit of cholic, his price is recoverable, seeing that crib-biting is a very common cause of cholic. We find, however, we have still remaining too much on our hands to be able, within the space we can afford, to wind up this important question this month. We hope to do so next.

Amid the reflections and indignities to which veterinary surgeons, on occasions, because they are *veterinary surgeons*, are subjected, it is pleasant and refreshing from time to time to behold one of our proscribed body placed in a station of honour deservedly merited by the estimation, private and professional, in which he as an individual is held not only by those doing duty with him in the same regiment, but even by others who from their exalted stations—in command of armies in place of regiments—would hardly be expected to know, even by name, of such persons, much less to possess any knowledge of their several qualifications and characters. We have been led into making these remarks by the announcement, in the newspapers of the 7th March last, that there was presented at the levee held the day previous by H. R. H. Prince Albert—all such presentations being officially noted to be "equivalent" to those to Majesty itself—

> "Mr. D. Cullimore, Veterinary Surgeon, Bengal Horse Artillery, by Viscount Gough:"

an announcement, we repeat, which is most cheering to our drooping spirits, after the long, dreary, dark night of veterinary abeyance and obscurity. Notwithstanding that a veterinary surgeon, now "dead and gone," of questionless talent, of acknowledged medical fame, and by whom light has been shed upon veterinary science brighter than has appeared since his time, was created, late, indeed! too late in life, a F.R.S.; and notwithstanding the day has been when a veterinary surgeon has been graciously honoured

by dining and taking wine with Majesty; yet is the present, we believe, with one single exception*, and that not one of the regular army, the *first* presentation that has been made at Court of an army veterinary surgeon; and he not belonging to the Queen's army, but—with no feeling of disparagement be it spoken—to the Hon. East India Company's Artillery. Mr. Cullimore, we repeat, stands in the proud situation—and we most sincerely and cordially congratulate him on the auspicious event—of being the first, and hitherto the sole, veterinary surgeon in the regular army who has been led through the threshhold of royalty, and presented formally, *in propriâ personâ*, to his Sovereign; a distinguished honour, which, from the high standing of ours among other courts, is a passport to him to any other regal presence in the world.

Lord Gough—the gallant, the brave, the noble Gough—has thus given veterinary science and its professors a lift which will not pass out either of their memory or their gratitude. Let us hope that there exist other noble lords and commanders in the service who will not blush to take their veterinary surgeons by the hand, and, as Lord Gough has done, lead them into the presence of their Sovereign.

MISCELLANEA.

Matico.—*Piper Augustifolium.*

Mr. Dickens, veterinary surgeon, Kimbolton, has made trial of this South American herb as a styptic, "with perfect success." He has used it, instead of the actual cautery, to stanch the hemorrhage caused by docking.

* We allude to Professor Sewell, who was presented as veterinary surgeon to the City Light Horse.

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LAMENESS IN HORSES.

By WILLIAM PERCIVALL, *M.R.C.S. and V.S.*

TENOTOMY.

(*Division of the Flexor Tendons.*)

DEFINITION.—TO say nothing of the valuable elucidations human anatomy and physiology have from time to time received from the investigation of the structures of different animals, and the varieties in their general economy, we may take occasion to remark here, that the operation we are about to take into our consideration appears to be of purely veterinary origin and growth, and that for any utility it may have turned out to be to the surgeon, he stands debtor to the science and practice of the veterinary surgeon. So long ago as the time of Vegetius, horses were "said to be stiff-limbed," suffering "from a contraction of the nerves (*tendons*) in their feet," treading "with the tops of their hoofs," having "their joints rigid and stiff," unable to "set their hoofs full upon the ground." And though since the age in which this father of veterinary medicine lived, "stiffness of limb" or "stiff legs" has found mention in works on farriery, with some ridiculous nostrum for their relaxation and relief, yet has the description, brief as it is, remained, in a practical view, unsurpassed, and the ailment without a remedy, up to the time of the improvement which farriery in our own country underwent some few years anterior to the introduction of veterinary medicine as a science.

ALL THE HISTORY I am able to glean of the suggestion and practice of an operation which has proved—so far as remedy can be expected to turn out—of effective service in such distortion of limb, is to be found in the third volume of THE VETERINARIAN (for 1830.) In a communication therein "of the Edinburgh Veterinary School," from the late Mr. Castley, at page 309, we read that "Mr. Dick's (the present veterinary professor at Edinburgh) father

occasionally practised this operation many years ago; and I (Mr. Castley) have heard it said, but I know not how far that may be correct, some other person in Scotland." The earliest intimation I had myself of the operation was, many years ago, through some articles on the subject in the Sporting Magazine, by Professor Dick. I must confess, at the time, the operation, so purely mechanical, and so far unsurgical, as it appeared in my eyes, created in my mind anything but a favourable impression. In theory I felt myself decidedly opposed to it. Nor was it anything short of putting it with my own hand to the test that convinced me of its efficacy, without its being followed by those unpropitious consequences which in my own imagination I had conjured up as so many drawbacks against such an operation."

Mentioning the subject, in May 1833, to Mr. Cherry—the present Principal Veterinary Surgeon of the Army—it was resolved between us that the operation should be put to the test; and he having at the time a young ass in his possession, proposed that the animal should be subjected to an experiment which certainly entailed but little pain, and out of which benefit to science seemed likely to arise without the necessity of permanently laming or even of much disfiguring the animal. Accordingly, both flexor tendons of one fore leg were divided with a scalpel, and with them, unfortunately, owing to a struggle made at the instant, the metacarpal artery. The division at once let down the heel of the hoof more completely upon the ground, while the toe inclined to turn up; and when the animal came to walk, the toe, no longer being employable as a fulcrum, every time the maimed limb had to move forward, the body sank down on that side as though it would have fallen to the ground had it not been for the instantaneous transfer of the weight upon the opposite (fore) leg. A compress was applied upon the leg to stanch the hemorrhage; after which was effected, the animal was turned out to take its chance, without any bandage or application whatever to the incised leg. In this condition, under circumstances apparently little favourable to union, still did Nature's resources prove amply sufficient to heal up the wounded parts; and, in the course of time, to restore normal action: insomuch that Mr. Cherry kept the ass for his lifetime afterwards, using him for carrying his children, drawing a small watercart, &c.

CONTRACTED SINEWS—which means *contracted muscles*—being the name given to the case for which TENOTOMY is performed, and it being, so far as this operation is concerned, an *unique* case, it will become my duty here to give some account of it. Of the two sets of muscles provided for the motions of the fore limb, one set, the *flexors*, bend the leg and foot; while the other set, the *ex-*

tensors, extend or straighten these parts: they are, consequently, antagonists in action. But the flexors are more numerous and powerful than the extensors. And owing to this superiority of power, there is a continual (natural) endeavour on the part of the flexor muscles to bend the leg, which they are only prevented from carrying into effect by the counter-action of the extensors, aided by the natural standing posture of the foot upon the ground; whenever, however, this equilibrium of action comes to be destroyed either through insufficient power in the extensors or excess of it in the flexors, or through the want of that co-operation which the ground affords so long as the foot continues placed upon it, the flexors draw the heel up and the toe down to that extent that the horse, on occasions, either treads upon the point of the toe exclusively, or absolutely stands and walks upon the fronts of his fetlock joints. In such a condition as this it is manifest the animal is rendered useless. Nor do I know of any thing that can save him from slaughter except the operation now under our notice. I shall give a case in illustration, and it is the earliest case of the kind I find recorded in THE VETERINARIAN.

Mr. Wells, of Wymondham, in June 1828, was consulted about a horse that had been lame and useless for three years from a "sprain" of the tendon of the off hind leg. He had been blistered and fired, and blistered again, without affording relief. The foot was now drawn up by the permanent contraction of the flexor muscles to that extent that the front of the fetlock came down upon the ground at every step, impeding action so greatly that "the horse had been nine hours in coming a distance of seven miles." The flexor tendon was divided midway between the hock and fetlock, and at the same time neurotomy was performed, the last being deemed requisite to restore the action of the navicular joint. In two months afterwards, the horse, free from pain and lameness, was put to plough, where he was at work at the time this account was written, which was nine months afterwards*.

But "contracted sinews" giving rise to so much deformity that the horse is thereby rendered unfit for use, may arise from natural causes, independent of any work or medical treatment the animal may have been subjected to. In October 1837 was purchased a colt (gelding) for the First Life Guards, of a long-legged and growing character, who, originally ill-formed in his fetlocks, after purchase grew for several months so rapidly that his fore legs, becoming weaker and weaker, at length failing to sustain the weight of his body, gave way under it, becoming what is called "bowed" to that degree that the knuckling over was day by day bringing the

* This case will be found at length in the second volume of THE VETERINARIAN, page 142.

fronts of the fetlocks nearer and nearer to the ground. I proposed the operation of tenotomy, which was performed by myself at Windsor in July or August—I forget which—in 1838. Within a month afterwards the horse walked to London. He was kept four months after this, in the course of which his legs became much less bowed, and he acquired strength in standing and walking upon them. It being evident, however, that there was no prospect, young as he was, of his ever recovering strength sufficient to carry a life-guardsman, he was cast and sold, being then but in his third year. What became of him afterwards I lost all means of ascertaining. In this instance we cannot call the success more than partial. I shall next transcribe, from the seventh volume of THE VETERINARIAN, a well-narrated case of unsuccessful result; one that will serve to put us on our guard against harbouring vain hopes ourselves, and holding out too flattering prospects to others.

Mr. J. Holford, V.S., Middlewich, was applied to concerning a valuable horse, nine years old, who from a kick upon the off hind leg received two years before, for which he had been blistered repeatedly and once fired, had come to work gradually worse upon the limb, until at last he came to walk upon the point of his toe. His owner had been told that the heel might be brought down upon the ground again through an operation, and it was on this account that Mr. Holford was consulted. He accordingly operated. In six weeks afterwards the patient was in a state to be turned to grass, "without much perceptible lameness." In three months he shewed no lameness, placing his heel down "apparently with as much facility as the other." Another month's grace was given him, and he was then put to work (which was drawing a fly-boat along a canal), but had not proceeded eight miles before he began to walk lame. The owner sent him home greatly disappointed, and gave him six weeks' longer rest. He was again taken to work, but not allowed to do more than half what other horses did. For two months he kept up at it; then, once more walked upon his toe, though "not so much as before." At the time of this report of his case he is, with a lever shoe upon his foot, turned out for a winter's run, not worth £10; "whereas, had he done well, three times that amount would not have bought him."

In the same (the seventh) volume of THE VETERINARIAN, several cases are given by Mr. Young, V.S., of Muirhead, Garnkirk, N. B. In one horse, whose off fore leg was much thickened, had been fired, and was so much contracted that "he could put the tip of the toe only to the ground," he "cut the leg," as the operation is there called; and the result was, although under unfavourable circumstances from the distance the patient was at, that "at the end of nine weeks he was drawing a cart." The leg remained "thick,"

but was "straight," and the foot treads "in the natural position." "The owner said he was as strong on the cut leg as on the other."

These cases will be sufficient to shew the variable success, depending on circumstances, sometimes apparent, sometimes unforeseen and unavoidable, attending the operation. I will now produce a case in illustration of an incidental mishap which all undertakers of this bold operation must calculate beforehand the probabilities or improbabilities of meeting with; and I do this in order that practitioners may in their minds be prepared for such-like unwelcome occurrences and results.

Mr. Goodenough, V.S., Driffield, divided the flexor tendons for "contraction" in the usual way. But, after he had so done, he found he could not force the bent leg back into its straight or proper position. He fastened halters to the refractory limb, and employed four men to exert their strength in its extension. At the moment of their utmost efforts "a loud crack was heard," which frightened the men and surprised the operator. A few days were allowed to pass, when, no hopes whatever appearing of recovery, the horse was destroyed. It was found that the sesamoid bones had contracted adhesions to the metacarpal bone, and that these (adhesions) had sustained the force used for extension, while the sesamoids had become thereby fractured in twain.

THE OPERATION OF TENOTOMY, though a formidable one for the patient, is not a difficult one for the operator. The object is, section of the flexor tendons; the effect of which, as we have seen, is to let down the heel of the foot, not the fetlock, to the ground. The flexor tendons support the pastern and foot joints principally; the fetlock joint having the additional strong support of the suspensory ligament, which it still retains after the tendons have been cut through. This accounts for the heel of the foot, without the fetlock, being let down by the operation of tenotomy.

Having cast the horse, and so secured the limb to be operated on that there is not much chance of any interruption being occasioned through its motion, I recommend that a longitudinal incision, three or four inches in length, be made through the skin, along the *back* of the leg, down upon the middle portion of the flexor perforatus tendon. This incision freely and boldly made at once, the operator will be able to stretch the mouth of the wound he has made round to the inner side of the leg; in which stretched position the skin is to be held by an assistant, while the operator introduces the fore finger of his left hand to push back the bloodvessels and nerve (which run along the inner borders of the tendons) against the suspensory ligament, so that they be safe out of the way, while with the right hand he insinuates his bistoury between them and the flexor tendons. Opposing, now, the cutting edge of

the bistoury to the tendons themselves, he commences incising them by a steady but firm and strong sawing movement, until both be completely divided. I say, he is to hold the bistoury—which ought to be a stout one—firmly, and to use it with some force, since such is the dense and tough texture of these tendons that they are not cut completely through without some determination. Complete division being made of them, the heel of the foot may not—in all probability will not—come down without some extension of the leg; and this must be made, not by such violence as Mr. Goodenough found himself compelled to use; still, with such force as will, if possible, make the limb straight, by stretching or even tearing through adhesions of moderate standing, so far as this can be effected without the risk of rupturing ligament or fracturing bone. The giving way of adhesions, in such cases, is frequently attended with a sort of snap or jerk, denotive of their being overcome, and by this the end is known to be answered: such adhesions and impediments to extension being commonly situate about or in the vicinity of the fetlock joint. The usual and most effective mode of accomplishing the extension is to place the knee against the front of the fetlock, and, grasping the back of the foot with one hand and the upper end of the leg with the other, to use such steady and moderate force as will accomplish the object without doing thereby harm. This done, the divided ends of the tendons recede from each other, leaving a gap between them of one or two inches, or even more, dependent upon circumstances.

THE TREATMENT AFTER THE OPERATION will consist more in watching the progress of healing than in any thing that can be done to promote it any great deal. The external wound not being directly opposite to the internal one, will require nothing, save it be a suture or two at the time to prevent its gaping; and these will have to be withdrawn so soon as suppuration shall appear. A wet linen well-applied bandage will be requisite to give support to the leg. But the grand aim of the practitioner must be, to maintain, to the extent of his power, by such means as appear best calculated for the purpose, *the proper position of the limb*. It will not do to endeavour to effect this suddenly. To parts which for a length of time have become settled to, and seemingly have enjoyed, a false position, it will take time, and considerable time too, to restore a proper one. No force or violence must be employed to bring about this: it must be accomplished by degrees, and by humouring—if I may use such a word here—rather than by any sudden or harsh usage. In some cases the heel of the "cut" limb may for a short time at first require being kept raised, or it may not. On the other hand, after a time, the long-toed shoe may be called for, to force the animal to place his heel upon the ground,

lest, after the healing takes place, the tendons become as contracted again as before the operation. During the healing season, inflammation of the limb will be kept within due bounds by the usual remedies.

THE SUCCESS OR NON-SUCCESS OF TENOTOMY will depend on a variety of circumstances, most of which will, on due reflection, prove to be within the control of the veterinary surgeon. Of course the first, and indeed chief, consideration with him will be the fitness or non-fitness of the subject for such an operation. If he be called on to operate on a horse at every risk, in that case no responsibility can rest with him. On the other hand, when called on for an opinion, he will have to use both great judgment and great caution in giving one. Cases in which mal-position is clearly owing to anchylosis, though it be but partial, of the fetlock, or pastern, or coffin-joint, are irremediable in this way. Neither can cases of contracted limbs of many years' standing in aged horses be undertaken with any great hopes of affording relief. Nor indeed should very young horses, whose limbs have become crooked from over-growth and weakness, be made the subjects; since their deformities, like those of children, admit very frequently of relief by other and simpler means, and with the accession of strength, with aids of art appropriate for them, right themselves. Tenotomy may likewise fail of success from the operation being unskilfully or ineffectually performed. Or, the after-treatment may prove injudicious or even hurtful, frustrating the good which the operation would otherwise have certainly effected.

THE UTMOST WE CAN EXPECT FROM TENOTOMY is to render a horse useful for certain purposes, who, before the performance of the operation on him, was in a condition of utter uselessness. If we restore a cart-horse to the plough where the land makes his work comparatively light;—if we can make a used-up hunter serviceable for harrow or dung-cart;—if we can send horses, good for nothing in their present state, to work in fly-boats, road vans, brick or sand mills, &c. &c., we most assuredly confer thereby, *quoad hoc*, good service on the public, to say nothing about the humanity of saving life whenever and wherever it may happen to be in jeopardy. As with neurotomy, we have had evidence of tenotomy being over-valued and misapplied. Each operation has its legitimate sphere of applicability and usefulness; to carry it beyond which is to bring it, undeservedly, into disrepute. Wisely applied and skilfully performed both operations will redound to the credit of their introducers—Professors Sewell and Dick—wheresoever, and so long as ever, the veterinary art is practised.

ON TORSION OF THE UTERUS IN THE COW.

By W. A. CARTWRIGHT, *M.R.C.V.S., Whitchurch, Salop.*

TORSION, or twisting of the uterus, is but of rare occurrence, yet now and then it has been known to occur. I know but of seven cases on record, and of another that happened in my own neighbourhood. The cause I consider must generally be attributed to falling down precipices, or to accidentally being upset by other cows. Great distention of the stomachs may, either of itself or especially in connexion with a fall, cause the uterus to be forced on one side, or twisted.

The first case (vide THE VETERINARIAN, vol. xiii, p. 407) is by Mr. J. Carlisle, V.S., Wigton, on which the Cæsarean operation was performed. This was caused by her tumbling down a break into a ditch, and remaining there for some time struggling very much. The calf and uterus were turned or twisted, in consequence of the lateral ligaments giving way, which would take place during the fall, as the poor animal completely turned over before she fell to the ground.

The uterus was completely rotated even to the termination of the vagina, and which rendered all attempts to pass the hand impracticable. The Cæsarean operation was performed; but the same night she died.

ON EXAMINATION, the mesentery, attaching the small intestines to the spine, was torn for a considerable length; the pelvic region being completely crammed with them, in a state of putrefaction. The broad ligaments near to the cervix uteri were extensively ruptured; and the cervix uteri, where it had been twisted, was highly inflamed. That part of the gut which rested on the brim of the pelvis was strangulated from the weight of the calf resting upon it. He believed that the pains that were supposed to be connected with parturition were nothing more than from the injuries sustained by the sphacelated intestine.

M. Canu, V.S., Thorigny (Manche), vide THE VETERINARIAN, vol. xiv, p. 413, in a memoir related four cases of a peculiar species of displacement of the uterus, observed in the cow during gestation. In each of these cases, that portion of the womb which ought to have been connected with the left flank was found in connexion with the right flank. This displacement had given a tortuous direction to the neck of the uterus which frustrated all attempts to effect parturition. The cows died because it was impossible to remove the fœtuses from them.

M. Lecoq, V.S., Bayeux, in a memoir, amongst other cases,

relates one of torsion of the neck of the uterus in a cow, but the translator has not given the particulars.

M. Eléouet, V.S., in the district of Morlaix (Finistère), mentions a case of reversion of the uterus in a cow, where the primitive accident became implicated with a rupture of that organ, across which the hand of the operator had to pass. M. Eléouet terminated the operation without taking any notice of the rupture, and the animal perfectly recovered.

Mr. Batho, of Tilstock, near this town, had a cow that could not be delivered in consequence of the uterus being twisted, and which was discovered after death. Cause unknown.

Treatment.—It may sometimes happen that cows, or other animals, may occasionally have a twisting of the uterus when they have not attained their full period of utero-gestation. In such cases, little can be done but combat the existing symptoms, since, of course, it is doubtful whether it really exists. But whenever the animal is known to be nearly at her full time, and labour pains come on, and she cannot calve, we may suspect such an occurrence. If the os uteri is dilated, we shall easily ascertain whether the uterus is twisted or not; and if it is, we shall be unable to pass our hand into the uterus, or to touch the fœtus. Other symptoms may assist us in our diagnosis, such as examining the abdomen externally, to ascertain if any displacement of the fœtus has taken place to any other part of it more than usual. We should also introduce our arm up the rectum to find out, if possible, whether there is any swelling or enlargement of the neck of the uterus, indicating such a result.

If we really believe that there is a twisting of it, what is the best way to proceed? But little hitherto has been written on the subject. The four cases related by M. Canu, and the one in my neighbourhood, were left to their fate, and died. But Mr. Carlisle was more bold and scientific; he performed the Cæsarean operation. Before I decided on the Cæsarean operation or abdominal incision, I should be disposed to turn the cow clear over once or twice, for the purpose, if possible, of untwisting it, and after having done so, make an examination to see whether the uterus was untwisted. If I found it was not, I should then turn her the contrary way, and afterwards make the same examination. If I did not succeed in this way, I should proceed according to a suggestion given me by Mr. John Steel, of Biggar, Lanarkshire, viz., to make an incision between the ileum and the ribs on the right side, and try to untwist it. If I succeeded, I should sew up the wound, and allow the labour to take its natural course; but if not, I am not aware that there is any other means but that of performing the Cæsarean operation.

Mr. Steel, although he has not yet had an opportunity of testing its practicability, deserves the thanks of the profession for such a suggestion, and it is one which I think very likely to succeed. At any rate, if it does not, we can but perform the Cæsarean operation. As to leaving the animal to die undelivered, such a proceeding at the present day bespeaks but little of the practitioner's judgment or surgical abilities.

ON "LOIN FALLEN."

By the same.

As the calving season has now fully set in, and warm weather is coming, one may be allowed to call attention to that most fatal disease (in my neighbourhood at least) "puerperal fever," or what is more commonly called "loin fallen."

Although I have seen at least a hundred cases, chiefly in this town, during the last twenty-five years, yet I am almost ashamed to confess that I cannot call to recollection that I ever cured a single case; nor have I ever heard of a case being cured by any of the quacks in the neighbourhood. As to the antiphlogistic treatment, I must say that I have tried bleeding to a great extent without seeing any good effect from it, and until I am heartily tired, and I almost vow, when every fresh case occurs, that I never will bleed again. I should, therefore, be glad to hear the successful treatment of others, in towns, on the subject; and perhaps ere long I may send a paper on the subject, having by me the notes of several cases, and post-mortem examinations, which are very troublesome to make.

THE CONTROVERSY ON THE EXPANSION OF THE FOOT.

To the Editor of "The Veterinarian."

Sir,—For some months past a most interesting subject has appeared in The Veterinarian, concerning the "action of the foot of the horse;" and, having witnessed the experiments on one side with great interest, I beg I may be permitted to express an opinion of the manner in which Mr. Arthur Cherry has treated the subject.

The absorbing fact which included the difference of your cor-

respondents has been, *pro* and *contra*, "the lateral expansion of the quarters of the foot, and the descent of the sole." The subject appears to have been entered on by Mr. Gloag not with the idea that writers upon it could not be recalled, but that the spirit of examining it was all but extinct, and nothing yet had been satisfactorily arrived at.

Fully to appreciate Mr. Gloag's experiments, we must understand that he has not attempted to copy or retouch what might have been previously written, but purely to give the results of experiments which would lead to some conclusion on the subject, by eliciting the opinions of the profession.

In your last Number I find Mr. Reeve's reply, and a very interesting and highly valuable paper from Mr. Ernes (one of the oldest and best of practitioners); also a very clever paper from Mr. Hodgson, on a novel, interesting, and very important subject,—"the formation of horses, as far as it affects their feet"—many parts of which strikingly tend to elucidate Mr. Gloag's opinions; and following these comes Mr. Arthur Cherry—not with the mediocrity of his position, contenting himself with giving his ideas on the subject, or directing the attention of readers to sources of information, but, taking Mr. Reeve under his especial patronage, dips his pen in gall, intent only on annihilating Mr. Gloag.

With all we know of the processes of the human mind, Mr. Cherry has explained why he writes in this blustering style: the "episode" which he lays before us shews the matter in its true light. Mr. Gloag, instead of replying to him *publicly*, wrote to him *privately:* this was sufficient to stir the flames which could not be cooled away until Mr. Gloag should experience considerable discomfort at the pen of Mr. Cherry. "The *alma del negocio*," or essence of the affair, turns therefore upon Mr. Gloag's declining *publicly* to answer Mr. Arthur Cherry, purely because he wished to escape (what I am sorry to say he has not succeeded in) productions similar to the last, the character of which is most offensive, for I do not remember to have read expressions so contemptuous or so uncalled for. Throughout Mr. Gloag's papers we find him courteous, earnest-minded, and pains-taking; and very advantageously are his compared with the productions of Mr. Cherry. Mr. Cherry has given us quotations, labelled "Gulliver," "Life of Mahomet," "Garrick," "Scott," &c., whereas the subject admits only of the "*argumentum ad rem:*" in fact, it would appear that his main design was not to impart any knowledge, but rather to divert the attention of the profession from it. I question whether the writers upon it will submit their merits to Mr. Arthur Cherry's "dictum," who has so indignantly pronounced a "*non habilis*" on Mr. Gloag.

Logic might, in a measure, have supplied the place of argument,

if Mr. Cherry had said any thing on the subject; but here he has used a method of chicane, because it is indispensable to him. He tells us, " in the October Number I reply to this farrago of pseudo experiments." As far as we understand " pseudo," the word is misapplied. Mr. Gloag's experiments were *bonâ fide,—pseudo* means false and pretending; so that this want in Mr. Cherry's education remains to be completed. Again, he says, " there were two modes in which I might have replied to Mr. Gloag's statements,—one by argument, the other by denial: I chose the latter, in which I was supported by the true principles of logic; but I also knew that the latter was the most difficult position in which I could place a sophist,—that of proving his own case." Atrophous verbiage!!! I maintain that Mr. Gloag has proved his own case by his experiments, not by conclusions *only* " on dead parts squeezed into a vice," but by the measures adopted by those adverse to his opinions, " on the living foot." In fact, whatever may have been the actual knowledge imparted on this subject, we must look to Messrs. Gloag, Reeve, Ernes, Hodgson, &c., for Mr. Cherry cannot be made available for their assistance; therefore we consign *Mr. Arthur Cherry* to that summary dismissal from the subject with which he has treated others. I hope you will concur in the validity of these objections to Mr. Cherry's paper, and its style, whose *veni, vidi, vici,* is put to flight; since his guns are neither great, nor is his powder strong.

I am, Sir, your obedient servant,

J. HELY, 11th Hussars.

Hounslow Barracks, 15th April, 1850.

*** Mr. Cherry's last communication reflected in severe language upon Mr. Gloag. The attack was as unprovoked as undeserved, and in our pages will not be renewed. Indeed, we felt regret afterwards in having inserted this one. Mr. Cherry is in error in " conjecturing" that the " effusion" by " shoeing smiths" emanated from the pen of Mr. Gloag.—ED. VET.

RABIES.

By JAMES MOORE, *V.S., Manchester Veterinary Institution.*

ON the morning of the 12th February I was requested to visit a mare, the property of Mr. Shawcross.

History.—A grey mare, clean legged, of the cart breed, seven years old, stands 15 hands 3 inches high; has been the property of Mr. Shawcross since six months old. Up to this period she had been a remarkably healthy animal, having had no sickness,

and had been used for general purposes, being a very docile mare, and eight months gone with foal. On the day previous to her death, on putting her into the cart she snapped repeatedly at the man, and shewed other symptoms of such a peculiar character, that she was put into the stable, and was afterwards taken a distance of four miles, to a man said to be skilled in the treatment of "all disease to which flesh is heir," but who, unfortunately, was as ignorant of the true nature of the disease as the horse itself, and who prescribed a bottle of medicine, in the administering of which she ground the horn between her teeth, and inflicted summary punishment on the operators. The twitch was applied, but it only exasperated her, and further attempts were not made: water was then offered, which she refused, throwing up her head against the roof of the stable, which was rather low. They then concluded that she was mad.

My inquiries elicited from the men in Mr. Shawcross's employ, that on the 22d December, 1849 (leaving a period of fifty-one days before the development of the disease), whilst returning from the pit with a load of coals, she was attacked on the off side by a black and white bitch of the bull and terrier breed, that jumped up and bit her on the lip. This bitch was known to be mad, and was soon afterwards destroyed.

Present Symptoms.—She was standing in the stall, and on approaching her she snapped, and tried to bite; failing which, she eagerly laid hold of the rack or manger. She rubbed her muzzle on the right side forcibly against the wall, and, on attempting to approach her on that side, her attacks were more violent than on the other. The eyes were full and bright, and great restlessness and anxiety were betrayed by frequent neighing. She made many efforts to empty the bladder, and small quantities of urine passed at each. Water was offered her, which she partook of with avidity, and which was swallowed by a spasmodic effort for two or three go-downs; she would then recede for half a minute and commence afresh. This she repeated until she had consumed a gallon.

Ten o'clock, A.M.—All the above symptoms were aggravated. She stared wildly about; then, fixing her gaze upon one object, she would dash furiously at it, and each attack was accompanied with a gush of blood from the mouth. These attacks were made so repeatedly and with such violence, that the superior maxillary jaw was fractured immediately behind the symphysis, the alveolar processes of the incisors broken, and the teeth displaced.

It was my intention to have watched the case to its termination, but I was obliged to leave on account of other business, and was informed by a messenger that she died a little after twelve at noon,

making a period of thirty hours from the commencement of the attack.

The furious state the animal was in prevented my adopting any treatment for its relief.

Post-mortem, four hours.—Tumefaction to some extent of the lips, from contusions; the teeth in superior and inferior maxillary bones displaced; alveolar processes of incisors broken and comminuted, the fractures extending to some distance in the bones; the superior maxillary bone broken across the middle, and involving the palate bones and bones of the nose; these latter were so comminuted, that they resembled more the appearance of being chopped with an axe.

Respiratory Organs.—Glottis thickened; mucous membrane covering it highly inflamed, and studded with numerous papillæ, of a dark red and scarlet colour, and a quantity of mucus adhering to it.

The trachea was lined with thick tenacious mucus, frothy, and of a pinky colour: on washing this away, the mucous membrane was seen highly inflamed at its commencement, being of a dark red, the colour gradually shading itself off to the bifurcation of the bronchial tubes, where it assumed a pale scarlet colour, and in many places it could be easily pulled off with the finger-nail.

This membrane was spotted throughout its whole extent: at the top part, where the inflammation had been most acute, these spots had formed patches, which became less and of a lighter colour as they were traced downwards, until at the termination of the trachea at its bifurcation they presented innumerable minute red points, which were continued into and along the bronchial tubes. Pleura healthy. Lungs inflamed, particularly the upper lobe of the left, and loaded with dark grumous blood.

Digestive Organs.—The papillæ on the base and sides of the tongue prominent and enlarged, the latter projecting a considerable distance; tongue hard and dry, covered with dry mucus of a dirty brown colour. Glands at the base enlarged. The stomach was moderately full of food in a partially digested state, which was stained of a red colour, from the blood that had been swallowed. Small and large intestines perfectly healthy, as well as the liver.

Organs of Circulation.—The pericardium contained about four ounces of fluid. The heart was naturally large, weighed about 9½ lbs., was of a peculiar yellowish-red colour, and its muscular structure softened.

The ventricles contained a small quantity of dark uncoagulated blood.

The blood in both arteries and veins was uncoagulated, and of a dark grumous colour.

Urinary Organs.—Bladder empty, which, with the whole urinary apparatus, was perfectly normal.

Brain.—The membranes investing and covering the brain were all more or less inflamed, particularly the pia mater, velum interpositum, and the arachnoid, about the pons varolii and commencement of the cord. The substance of the brain itself healthy. Ventricles empty.

Remarks.—This is the second case of rabies, in the horse species, I have met with in my practice, both of which were mares, and both were in foal: but what I wish more particularly to call the attention of the profession to is, the circumstance that in each case the fœtus, on post-mortem examination, presented exactly the same morbid appearances as those observed in the mother; a fact that I do not recollect being mentioned by any writer on morbid pathology who has treated this subject.

There is also another circumstance that deserves a notice in this place. Why did the animal rub her muzzle on the off side, where the bite was inflicted, and why betray more excitement on being approached on that side? Although fifty-one days had elapsed since the poison was communicated, one would suppose that in that time all local irritation would have subsided, and doubtless this was the case; but it had undoubtedly been excited anew, as the disease developed itself.

This secondary local irritation is a peculiarity belonging to the brute creation; the human species, as far as I can ascertain, not being liable to it.

I have, in all animals labouring snder rabies, invariably noticed the absence of cough, or other symptom of an important pulmonary character, that would lead you to suspect such extensive disease of the respiratory apparatus as was found on post-mortem examination of these parts; yet these organs were more affected than any other, and we have only the dyspnœa to guide us in diagnosticating disease of the lungs. We have redness and congestion about the air-passages, and sometimes about the stomach and intestines, and many ascribe rabies to a morbid state of these parts; but I think it may more properly be attributed to be a disease entirely of the nervous system, from the extreme sensibility, the restlessness, and spasmodic efforts at swallowing, and the irritability and suspicion of the animal.

As no sign of disease could be found in the bladder or urinary organs, I cannot account for the great irritability of these parts during life, further than they have been affected sympathetically, through the nervous system being thrown into a state of convulsive irritability.

This disease has long had assigned to it a name that does not

designate its true character. It was at one time universally known as hydrophobia, from the supposed dread of water that animals had whilst suffering from it; now it is called rabies, which signifies madness. This name is applicable enough to that kind of disease known as dumb madness, but does not at all apply to madness with excitability. I would, therefore, launch a new name for this kind of madness of which I am writing, and suggest to my professional brethren that we should henceforth designate it as *rapio-manies*, or snapping madness.

A CASE OF PNEUMONIA, ATTENDED WITH GREAT PROSTRATION OF STRENGTH.

By GEO. H. DARWELL, *M.R.C.V.S., Knutsford, Cheshire.*

ON the 20th February ult. my attendance was requested at Mr. Caldwell's, of this town. On my arrival I found that my patient was a black horse, six years old, in good condition, and of the cart-horse breed. I immediately proceeded to examine him, and the following were the leading symptoms:—Accelerated and rather oppressed pulse; slight cough; eyes dull, and languid countenance; pain evinced on applying pressure to the larynx; head pendent; visible mucous membranes injected; breathing increased; hot mouth and fœtid breath; extremities cold; fore legs wide apart, and a disinclination to move. Having satisfied myself that the disease was of a pneumonic character, I at once abstracted blood until the pulse told me to desist. I then administered the following febrifuge:—aloes ʒii, digitalis ʒi, pot. tart. ant. ʒiss, theriacæ q. s., ut fiat bol.; applied the ung. cantharidis the whole length of the throat and sides; ordered his extremities to be placed in hot water, afterwards bandaged up; a little bran mash and warm water allowed, not forgetting a sufficient quantity of pure air.

21*st.*—Pulse not so oppressed; bowels have responded, and respiration not so difficult: has eaten a little bran mash, and drunk a small quantity of water, but has never lain down. There was one symptom I did not like, and that was the effect of the blister which was applied the day previous. There was not one vesicle to be seen, nothing excepting a slight tumefaction. I ordered the throat and sides to be well fomented with hot water, afterwards to apply lin. ammoniæ et cantharis. Treatment as before.

6 P.M.—I was requested to attend, the man stating the horse was worse; accordingly I went, and found him much the same,

excepting the breathing, which was much more laborious than in the morning. I bled him again, and inserted a rowel in his chest, during which operation he did not evince the slightest pain; nor did the least quantity of blood follow the incision, and, while breaking down the cellular tissue, it felt quite cold. I then gave him spt. nit. æth. ℥iss; applied the blister again; pursuing the same treatment as before. I stayed with him a few hours, and then left him for the night.

22*d.*—Respiration same as usual; pulse quick and threadlike; bowels natural; extremities and surface of body deathy cold; had never lain down, nor yet tasted food, but stands in the same position as yesterday. Vesicants seem of no avail; but the rowel is beginning to discharge. Give him some gruel, and continue the treatment as before.

6 P.M.—Only a slight tumefaction in the vicinity of the blister. Pulse denoting debility. Give him spt. nit. æth. ℥iss.

23*d.*—The horse seems to be quite in a state of languor; does not move a leg. Breathing still hurried; pulse same as usual. Administer more gruel, since nature is becoming quite exhausted.

From this date to the 27th he continued in the same state; had not partaken of any food excepting the gruel, which was horned down. He has not lain down from the commencement. He is now a pitiful object to look at; in fact, he is in such a debile state, that when we attempted to move him he fell against the partitions of his stall. I entertain no hopes of his recovery; I am resolved, however, at last, to try the effects of carb. ammoniæ. I accordingly administered carb. amm. ℥iss, zingib. pulv. ℥iss, gent. pulv. ℥iss, theriacæ q. s. ut fiat bol. twice daily, together with a half-pint of port wine, during the day.

The next morning I visited him, and fancied him somewhat better. He seemed to notice his mash, though his breathing still continued disturbed. Continue same treatment.

We pursued the above mode of treatment for a week, at the expiration of which time he would eat any thing offered him in the shape of food; and now he had lain down, and his respirations had become more natural. He soon was exercised every day; though when walking he was in such a debilitated state that he would cross his hind legs over each other. With a little care, and the administration of tonics, he ultimately recovered; and is now quite convalescent, and at his usual labour.

*** Mr. D. was fortunate in the issue of his case. When such another presents itself, we advise him not to bleed at all; and to rowel and blister at an *early* stage.—Ed. Vet.

SPAVIN OR NOT?

To the Editor of "The Veterinarian."

Sir,—I HAVE a pony, thirteen hands, that has been lame in the near hind leg for these last three months, and I cannot determine whether the injury is in the hock, fetlock, or back sinews: he has been used to carry twelve stone weight at a gentle pace these last four years, and has never been unwell.

I cannot detect any spavin, but when he starts on a journey he does not flex the hock as he ought; stepping short, and often trips up behind when going down a hill, but after trotting a mile the lameness is scarcely perceptible.

Gentle pressure applied to the tendons behind the fetlock causes him to raise the limb as if it gave pain. I have never felt any heat about this part, nor the foot, which appears quite healthy; nor does the hip appear to be the seat. The farrier says it is in the back sinews, and nothing but a blister and a run at grass will benefit him. Is it so? or is there *interarticular spavin?* Please answer in the next Number of THE VETERINARIAN, and oblige

AMYLUM.

*** If the lameness be in the fetlock or back sinews, there will be detectible tumour and heat and tenderness; if in the hock, as seems more probable, it is not absolutely necessary for spavin to make its appearance externally; the disease may exist *within the hock joint*, and some day may shew itself outside.—ED. VET.

MEDICAL JURISPRUDENCE.

Fraud in obtaining a Surgeon's Diploma.

SOME time ago, at the High Court of Judiciary, Edinburgh, William Duncan, surgeon, Amble, Northumberland, and Alexander Cumming, surgeon and druggist, Broughton-street, Edinburgh, were charged with forgery, and a conspiracy to procure a diploma from the Royal College of Surgeons of Edinburgh, to enable William Duncan to practise surgery and pharmacy without his actually appearing before the examinators appointed by the College to take the candidates for diplomas upon trial, by means of Cumming assuming the character of Duncan, and undergoing the necessary examination. In furtherance of this design, Cumming obtained from the Conservator of the College a printed form of a schedule required to be filled up and properly attested by the

candidate, exhibiting the full extent of his professional education, which he filled up, and appended to, the signature of "William Duncan;" and thereafter delivered it to the President of the College, pretending that he was the person whose signature was attached to the document. Cumming afterwards attended and passed the usual examination appointed by the College, on the 4th Dec. 1844, and, by representing that he was the William Duncan represented in the certificate, he obtained a diploma in Duncan's name, qualifying him to practise surgery and pharmacy, which he immediately delivered to Duncan, to be used by him as a diploma in his favour, and which was accepted by Duncan for this purpose. The parties were apprehended in January last. The indictment set forth, that Duncan and Cumming, in carrying out their conspiracy, were both in Edinburgh; but no evidence was adduced to shew that this had been the case in regard to Duncan, and he was consequently acquitted. Cumming was found guilty, and sentenced to one year's imprisonment. It is impossible to say to what extent these frauds have been committed.

REVIEW.

Quid sit pulchrum, quid turpe, quid utile, quid non.—Hor.

On the Laws and Practice of Horse Racing, &c. *By the* Honourable Captain Rous, R.N. London: Baily, Royal Exchange Buildings, London, 1850. Small 8vo, pp. 127.

Should the question be asked, what have veterinary surgeons to do with racing?—we may answer by reversing the same question, and ask, how would horse-racing fare without veterinary surgeons? Veterinary science may be said to be estimated by the public at some such ratio as its principal object of treatment, the horse, fetches a high or a low price in the market, or the worth he is nominally set at by his owner. Nobody needs to be informed of the enormous sums occasionally paid for race-horses: hunters fetch their hundreds; but racers command their thousands of pounds sterling. This is not, it is true, in the latter case, owing to any abstract worth or value the horses possess of themselves as mere fast runners; but it is contingent on vast sums of money wagered

upon events in which they are the principal performers. Seeing, then, that the stake dependent upon an animal in repute as a racer is at times so very great, and yet that such animal is obnoxious, and especially so, to all the ills and infirmities which horse-flesh is by nature—in its artificial condition—heir to, how essential it becomes that there should be somebody at hand able to restore him to health and soundness from the moment he happens to fail in either; else, what is to become of him at the post, what of his proprietors and backers? Here is a thousand pounds, or it may be five, hinging upon the contingency of a certain horse winning a certain race. The horse, a little before the event is to "come off," falls amiss or lame; and it is of thousands-of-pounds of consequence that he should be restored by such a day. What is to be done in such an emergency? Who can be called to his aid like a competent veterinary surgeon—a man who has made his diseases his own peculiar study, and from experience is skilled in all the ready and effectual means of their palliation or cure?

The present work, it is true, treats of the "laws" or "rules," and not of the *science*, of horse-racing; and of "betting," "handicapping," &c. of branches of racing, in fact, with which the less, it might by some be said, a veterinary surgeon in practice, especially if that practice happen to be among the race-horses engaged in such contests, the better. Still, it is but natural to veterinarians in their profession that they should experience some *penchant* for racing, feel some pleasure at least in the sports of the turf; and that on the course they should feel ashamed not to be in possession of sufficient turf knowledge to enable them to understand what is transacting, and how matters, of which they from profession have become spectators, are carried into execution. Now, this is precisely what we would have them glean from the work before us, and by which we would regulate our extracts; though, before commencing such as have reference hereto, we would crave our readers' attention while we recite to them, from the Preface, a neat, little, historical sketch of the origin of our native racer.

"The English race-horse boasts of a pure descent from the Arabian; and under whatever denomination the original stock of our thorough-bred horses have been imported—viz. as Turks, Barbs, or Royal Mares, there can be no doubt they were selected

by the patrons of the turf and by their agents during the reigns of James I, the two Charleses, and James II, and the Commonwealth; and whether they were brought from Barbary, Turkey, or the continent of Europe, they were considered as the true sons and daughters of the Desert. The first Arabian ever seen in England was imported by Mr. Markham, in the reign of James I; and the first foreign mares of any note were brought over by the agents of Charles II, under the denomination of Royal Mares."

Transplanted out of his native desert upon British soil, ungenial as the climate he has come to inhabit, by nature, is to him, yet is the Arabian horse made, in the course of years, to produce an animal superior in every racing or useful point of view even to himself. As by careful culture the grape and the pine of the hot-house of England has surpassed in flavour the same fruits grown in their native countries, so has the race-horse of Britain surpassed in speed and endurance any thing in horse-flesh Arabia could ever boast of. And this has been brought about by what? Not by "the change of climate," as Captain Rous thinks,—for climate of itself is an impediment to improvement,—but by

—— "The pasture, and extreme care and attention in breeding by (from) the best stallions (and never forgetting the maxim that *fortes creantur fortibus et binis*); it being generally believed by the most learned (experienced) men of the turf, that a first-class English race-horse would give six stone to the best Arabian which can be found, for any distance under ten miles. In 1828 a match was made at Calcutta between the English horse Recruit, 10 st. 8 lb., and the best Arab at that time in India, Pyramus, carrying 8 st. 3 lb., two miles. Recruit had been a very short time in India, and had tender feet, which disabled him from taking strong work; notwithstanding which, *he won in a trot.*"

"The clearest proof of the improvement which has taken place in the English race-horse is the fact that no first or second cross from the imported Arab, with the exception of the produce of one mare by the Wellesley Arabian (Fair Ellen), is good enough to win a £50 plate at the present day; whereas, in 1740, our best horses were the second and third crosses from the original stock: and we have no reason to assume that the Arabian horse of 1850 has degenerated from his ancestors of 1730. The most distinguished primogenitors of the English race-horse are, the Byerly Turk, the Darley Arabian, Curven's Bay Barb, and the Godolphin Arabian; and no horse of any eminence has appeared in England in the last hundred years which does not inherit their blood. Of the two former we know very little; they were sires of Basto and

Flying Childers: but the blood of the Godolphin Arabian is in every great stable in England. He was a thick-necked, heavy-shouldered, over-topped horse, without apparently a single good point adapted to racing qualifications." * * * "Our experience teaches us that the first cross from the Arab frequently shews speed; but there are very few instances of the first and second cross which can run beyond the distance of one mile in good company: I therefore suspect that the form of the best race-horse of 1750 is inferior to that of a common plater of the present day."

The modern practice of premature racing is commendably discountenanced by Captain Rous:—

"It is much to be regretted that the old system of not training horses until their powers are fully developed is abolished."

The expenses of training, and the establishing of all the important sweepstakes for two and three-year-olds, have led to this unwholesome change; one that destroys a horse's racing powers by the time he reaches his fifth (or adult) year, and yet one that cannot now, unfortunately, be altered. The following statistics of racing shews the flourishing manner in which the sport has progressed in Britain. Truly may it be classed among our "national sports."

"In 1762, there were 76 race-courses in the United Kingdom, on which 261 races were run, consisting of 49 matches, 38 sweepstakes, and 205 plates, amounting to a total value of £61,440. In 1807, there were 782 races, of which 189 were matches, 263 sweepstakes, and 269 plates, value £115,950, for which 691 horses were started. In 1843, 1218 races, 86 matches, 897 sweepstakes, and 191 plates, value £198,990, for which prizes 1289 horses started; and in 1849, 1307 horses started in public, of which 271 were two-year-olds, 417 three-year-olds, 254 four-year-olds, 365 five, six, and aged. There are 111 race-courses, of which three are in Ireland, six in Scotland." —— "It is computed that there are upwards of 200 thorough-bred stallions, 1100 brood mares, which produce about 830 foals annually: of these there are generally three in the first class of race-horses, and seven in the second class; and they descend gradually in the scale to the amount of 480, one-half of which never catch the judge's eye: the remainder are either not trained, or are found unworthy at an early age."

We have not been able to resist making the above interesting extracts from the work before us, although they constitute so much as two-thirds of its "Preface;" the remaining third being devoted to some casual remarks on "The Science of Horse-racing," &c.

Turning over a couple of leaves, we come to the body and substance of the work, comprising "Queen's Plate Articles"—"The Forty Rules of Horse-racing in General"—"The Newmarket Rules"—"Remarks on the Rules concerning Horse-racing"—"The Duties of Racing Officials"—"Racing Cases"—"Betting"—"Betting Cases"—"Handicapping," &c.

Here is a bill of fare furnishing but little matter for comment, and yet it is such as a racing man will read over and over again with complacency; and, withal, is wrapped up in a book of precisely such form and dimension as he may ride about with in his pocket, using it as a "Manual" or "Memorandum Book" whenever his memory may require refreshing upon any of the laws, rules, and decrees of the Jockey Club. We do not remember to have seen or heard of a work of the kind before. Captain Rous is too well known on the turf to, for a moment, admit of a question of its accuracy. It has only to be opened to afford the man on the turf information, *at view*, which without it must be sought in sundry places or from sundry persons, at needless cost both of time and trouble. No race-horse owner, no trainer, no jockey, few stable-men even, will go without it; nor will such of the veterinary craft as love the turf, and dabble in the transactions thereon, suffer their libraries to want this useful little work; but will at once procure it, and place it upon its appropriate shelf, alongside of that excellent racing production of one of their own profession—Darville "on Training," between that and the "General Stud Book."

Foreign Extracts.

Four Cases, as a Contribution to the Diagnosis in Aneurism in the Aorta and Mesenteric Arteries, particularly the Anterior Mesenteric Artery in Horses.

By Röhling, Oberthierarzt, and Obermedicinal, *Assessor zŭ Cassel.*

[Translated by Mr. Ernes.]

First Case.—In August 1836, Herr Böhling was requested to attend a brown mare, eight years old, belonging to a friend of his. According to the information obtained from the groom, the

mare had been off her appetite for some days past, and had been restless in the stall, as if troubled by worms. The result of examination of her shewed the mucous surfaces of the nose, mouth, and eyes pale; tongue coated; pulse increased; contraction of the heart weak; respiration normal; dung dry, and generally voided after the mare had shewn some uneasiness, with prostration of strength and apparent dragging of the posterior parts. Herr Röhling considered it an affection of the abdominal viscera, and prescribed accordingly. On the 16th the alvine evacuations were more abundant; the restlessness was not so great; the pulse was decreased to 31 beats per minute; but the respiration increased to 15 per minute, without being distressing; the mucous surfaces, as before, pale; weakness and dragging of the hinder parts the same; appetite decreased.

17*th*.—All the symptoms the same, with the exception of the restlessness, which was so much increased that the mare attempted several times to lie down, though seldom effecting it, and, when she did, it was with such caution, that it was quite evident the act was painful; and when down she would support her withers against the wall or stall, and draw her legs under her so as to lie on the sternum and abdomen, a position in which she would point to her back and grunt at times. After a little while she would get up, and immediately try to lay down again. The pulse had now decreased to 26 per minute, while the respiration had increased to 16. She was more tucked up at the flanks, the motion of which somewhat resembled that of broken wind. The contractions of the heart were very perceptible; the alvine excretion small and coated. What surprised Herr Röhling most by this visit was the decreasing of the pulse; a symptom which indicated either a want of nervous influence in the vascular system, or some affection of the brain, though of the latter there was not the slightest corroborative sign; Herr Röhling, therefore, concluded that he must have mistaken the pulse, and proceeded to a second examination. The result was precisely the same. But as he took the pulse at the brachial artery of the near fore leg, he put his right hand on the back, with a view of ascertaining the participation of the spinal column in the act of respiration, when he felt the pulsation of the aorta as distinctly as the contractions of the heart are felt at the time that the hand is placed against the left side of the chest. Some few pulsations were synchronic with the beating of the brachial artery; others were not. The pulsation was strongest opposite the last or short ribs, along the spine on the left side; but the oscillation of the vessel seemed to be towards the chest. This was an appearance which Herr Röhling, in a practice of many years, had never met with, and was consequently at a loss to

account for: it was, however, obvious that it could only proceed from a vessel of the largest caliber, and that it must be in the posterior aorta, not in the vertebral artery. On a more careful examination of the parts, no traces of inflammation could be perceived, nor any thing abnormal; and as the animal did not flinch on pressure, Herr Röhling concluded that there must be some obstruction in the aorta; though of what nature the obstruction was, whether contraction of the vessel or otherwise, it was impossible to determine.

The same treatment was continued. On the 18th the patient laid down more frequently in the aforementioned position, looked often and anxiously at his back, and grunted often and painfully. Pulse 18 per minute: 18 pulsations were also felt on the side of the spine, whose oscillations were, as before, towards the chest. The respiration was 18 per minute, but without being laborious. The respiration and the pulse at the brachial artery and the back were synchronic. The contractions of the heart were bounding. Appetite none. A few swallows of cold water were all that was taken. On the 19th, at six in the morning, the mare died. At twelve the same day Herr Röhling made a post-mortem examination.

On opening the abdominal cavity, the large intestines, colon and cæcum, presented no abnormal aspects. On removing them, the small intestines, posterior part of the pancreas, and the cellular tissue surrounding the kidneys, shewed traces of inflammation. The anterior mesenteric artery was enlarged to the size of a man's fist, of a very dark colour, very hard; and at the junction with the aorta both vessels were filled with a hard substance formed by the crassamentum of the blood, so that it was next to impossible for the blood to circulate through this mass to reach the posterior part of the vessels. The part of the aorta anterior to this tumour, up to the heart, was filled with thin dark-coloured blood. The remainder of the abdominal organs were healthy, and likewise those of the chest. Only the heart and lungs with the anterior aorta were filled with a quantity of thin extravasated blood. It was at the autopsy alone that the disease (aneurism) of the anterior mesenteric artery became apparent. The inflammatory process, which had terminated in gangrene, had involved the surrounding parts, particularly the aorta at the part where the mesentery is given off. By the exudation of the serum of the blood the solid part had obstructed both vessels, whereby the circulation had become so much impeded that it had almost entirely ceased. This discovery led to the following reflections:—

The rare pulsation of the aorta felt at the side of the spine, the vibration of the vessel towards the heart, was the effect of the con-

traction of the left ventricle of the heart. The blood meeting with an obstruction, against which it was vehemently forced, caused that sort of pulsation felt on the parietes of the back. By the dilatation of the same ventricle, the pressure being removed, the column of blood must have made a retrograde motion towards the heart, and have been the cause of the oscillations of the vessel in an anterior direction. However improbable this may appear to some, through there being no cases recorded in veterinary medicine in which a retrograde movement of the blood towards the heart in the large vessels had been observed, this case and the following appear in favour of establishing such views.

Case II occurred in a bay stallion, twelve years old. He had suffered for the last eighteen hours from what appeared to be *colic*. The pain was not very violent, but seemed from the beginning to have become gradually weaker, particularly in the posterior parts, which, as in the previous case, he dragged after him. When down, he lay quiet, but grunted a good deal and pointed toward his side. The pulse at first was a few beats less than normal; but twelve hours after the attack it was increased to 50 per minute, and was full and hard, for which venesection had been had recourse to. Herr Röhling found the patient down, lying on the chest, and supporting himself against the partition; looking anxiously towards his back, and grunting very much: the mucous membrane was very red; the temperature of the body increased; pulse 95; respiration 35; the air expired hot. By examining the region of the back, where the seat of the disease seemed to be located, a strong pulsation was observed, as if a large quantity of blood was forced from the heart into some large artery. This led Herr Röhling to suspect an *aneurism of the mesenteric artery*. The animal died on the 15th.

The *Sectio Cadaveris* gave the same result as in the previous case.

Case III occurred in a carriage-horse, the property of a wine merchant. In this case the following information was obtained:— The horse had the day before made a short journey; and when nearly to the end of it had begun to stagger, and in a fit of coughing had brought up a small quantity of blood through the nose. The animal was taken out, was allowed some bran, and at night was led home. In this there had been no recurrence of the former symptoms. But the next day he refused his food. The further information was, that at the time of the purchase, the horse, which was then five years old, had a cough, which the breeder said he had had from a foal. When six years old he became broken-winded. Besides this, he had an intermittent pulse. Herr Röhling concluded that the case was one of chronic affection of the

lungs; as is the case with the majority of horses similarly affected in the respiratory organs. He suspected, therefore, that the attack of the previous day was connected with this; and from the bleeding at the nose, the possibility of abscesses being formed, some of which might have been ruptured in the act of coughing, and from which at first matter, afterwards blood, might have been discharged. This, however, was only supposition. On a closer examination, the mucous coat of the nose was pale but intact; the tongue was coated; the pulse weak, small, and had decreased to 30 beats per minute; the contraction of the heart strong; respiration 15 per minute; the respiratory muscles convulsive, though this, in some degree, had always been the case with this horse; cough short and husky; alvine evacuations small, dry, and coated. The following prescription was ordered:—

℞ Pulv. ammon. mur.....ʒij
„ Kali sulphuric. .....ʒviij
„ Semin. phell. aq.....ʒj
„ Rad. altheæ .....ʒij
f. e. aq. Elect.

Of this a table-spoonful to be given every two hours, with enemata three times a day; the diet to consist of wet bran.

On the 19th, the information from the coachman was, that during the night the patient had several times pushed with the chest against the manger, while he raised his head as high as the reins of the headstall would allow; at the same time lowering the posterior parts almost to the ground, and once actually had fallen over. On examination, the pulse was 26; respiration increased to 16 per minute, and laborious; cough more frequent; appetite diminished; alvine evacuations more frequent, and softer. On exploring the back, a pulsation of 10 per minute was observed. This last symptom convinced Herr Röhling, that, besides the chronic affection of the lungs, there was an aneurism of the mesenteric artery.

On the 20th, the above-mentioned attacks had been more frequent; the pulse had decreased to 22 beats per minute; while the pulsation felt at the back was 14, and the respiration 16. The contractions of the heart were strong and bounding; the same in the afternoon. The animal died in the night.

THE AUTOPSY, which was made on the 21st, gave the following pathological lesions:—

Abdominal Cavity.—Cæcum and colon in their natural position, with normal appearance. The small intestines, the mesentery, the adipose tissue around the kidneys, with the posterior portion of the pancreas, inflamed. The anterior mesenteric artery enlarged to the size of a man's fist, hard, and of a dark colour. It was filled with a hard fibrous mass consisting of the coagulable part of the blood,

completely stopping up the mesenteric artery, and also, partly, the posterior aorta, at the part where the former is given off. Anterior to this the latter was considerably distended and increased in size, and was filled with thin dark-coloured blood. When this was removed, the vessel collapsed more after the manner of a vein than an artery. The remainder of the abdominal organs were normal. The lungs were of normal volume and of natural size, but were filled with dark-coloured blood. The pericardium contained more serum than in the normal state. The right ventricle of the heart was much distended; its parietes were so thin, that they resembled more a piece of skin than a muscular substance. It contained a quantity of thin dark-coloured blood, and, when this was removed, it collapsed like an empty bag. The left ventricle was normal, but contained (the same as the right) a quantity of vitiated blood. The autopsy here also proved that the animal died of an aneurism of the anterior mesenteric artery, accompanied with inflammation of the surrounding parts, particularly of the anterior portion of the posterior aorta, and principally at that part where the anterior mesenteric is given off. At the same time this was complicated with aneurism of the right ventricle of the heart (*aneurysma cordis*), and also a distention of the posterior aorta; while, on the other hand, there was no organic disease of the lungs, as had been suspected, and is generally found to be the case with all horses who shew symptoms of *asthma* or broken wind. That the chronic affection was aneurism of the heart there remains no doubt; the other lesions being more recent, as was clearly shewn by the traces of inflammation which were observed in the different tissues. Going back to the cough and the intermittent pulse, which already existed when the patient was only four years old, Herr Röhling was quite certain of this, and, according to the breeder's account the cough had existed almost from birth: he therefore draws this conclusion, that by the aneurism of the heart, though at first but small, the circulation of the blood through the lungs must have been considerably impeded, which was the cause of the cough. As this latter affection increased, the asthma followed. This naturally increased in intensity, when, from some cause or another, the circulation became more and more impeded by the obstruction in the mesenteric artery and the posterior aorta. These effects were followed by the fits of suffocation which so frequently occurred during the last illness, and which eventually terminated in death.

Case IV.—In February 1840, Herr Röhling was informed that a brown mare, six years old, one of the carriage-horses of the Elector, had fed very well the same morning; but at 9 A. M., when they went to harness her for the morning exercise, she could not be

made to move out of the stall. Immediate examination gave the following result:—The mare stood with her legs, both before and behind, wide apart; with her head in the manger, leaning her neck on its edge, with chest firmly fixed against it. She had lost all consciousness; the respiration was deep and sonorous; the eyes protruded; the pupils dilated; the upper lids drooping, and moved convulsively; the mucous membrane dry and red; increased temperature, particularly about the forehead; pulse full and hard, 50 beats per minute. These circumstances strongly indicated venesection should be forthwith resorted to; but the narrow stall in which the mare stood, and the loss of consciousness, necessarily caused some delay; and it was thought expedient to remove the patient to the adjoining riding-school. The bleeding was effected in a strong stream until the pulse became less full and softened, and the contraction of the heart became more marked. Cold water, in which ice was immersed, was applied to the head during the bleeding, and continued afterwards. The patient after the bleeding, which was a copious one, was slowly walked about the riding-school: such, however, was the effect of the venesection, that it became necessary to support her. Several persons had to walk by her side, to prevent her from falling.

The following prescription was ordered :—

℞ Pulv. kalichit..... ℥iij
„ Sulph. ..... ℥xij
„ Rad. liq. ..... ℥ij
„ Altheæ..... ℥iij
f. c. aq. Elect. q. s.

One table-spoonful to be given every two hours.

17*th*.—Consciousness in some degree returned. Pulse soft, 42 per minute. Contraction of the heart perceptible; respiration more free; temperature even at the head; moderate alvine evacuations, frequent, and in large quantities, but badly digested. The mare drank a little water from time to time, but deglutition was yet very irregular. The treatment the same.

18*th*.—The patient carries the head still low, but moves with more freedom, and without support; has eaten a small quantity of wet bran and some hay: pulse 34; contraction of the heart perceptible; respiration regular and free; mucous surfaces of a more natural colour than yesterday; alvine evacuations soft; temperature of the body decreased. By removing the clothing some isolated beats of the pulse were perceptible on the back, similar to those described in the former cases. On a second examination, in the afternoon, these had become more distinct. From this appearance it became evident that the congestion of the brain in all pro-

bability arose from aneurism of the anterior mesenteric artery. The post-mortem examination of the former cases had proved that, when pulsation was found at the back, there was aneurism of the mesenteric artery; and that this was accompanied by inflammation, followed by exudation and separation of the component parts of the blood. A thrombus was formed at the junction of the mesenteric artery with the posterior aorta, thereby nearly obliterating both vessels. This information at once decided the mode of treatment to be directed, to prevent the formation or cause the removal of this thrombus. To this end, calomel seemed to be the best internal remedy. The following prescription was accordingly ordered :—

℞ Pulv. hydrargyr. ..... ʒij
" Kali sulph..... ʒviij
" Rad. liq..... ʒj
f. c. aq. Elect. q. s.

This to be administered with care, to avoid bringing on purging. Low diet was enjoined.

On the 19th the senses were freer; the head in its usual healthy state; the pupils contracted naturally; and the patient had lain down for several hours during the night in a natural and easy position. The pulse was 26 per minute; the pulsation at the back 10 per minute; contraction of the heart strong; respiration 15 per minute, without, however, being laborious; excretion of the bowels loose; the mucous membranes pale; temperature of the body natural. Treatment the same.

20*th*.—Pulse 22; at the back, 14; contraction of the heart strong; respiration 16; excretions the same as yesterday.

21*st*.—Pulse 18; the same at the back; the respiration 18, and synchronic with the pulsation; contraction of the heart stronger than yesterday; appetite diminished, but not entirely suppressed; excretions the same.

The disease had now reached the stadium at which the horse in the first case had died; it was feared by these symptoms that mortification was setting in, and that there remained no hope of a favourable termination. Herr R. thought it advisable to report the unfavourable state of the case; but this nearly defeated his object, as the orders were, that, if the case was a hopeless one, the animal had better be destroyed. He, however, suggested that, since the disease was not of common occurrence, it would be better to quietly await the result: advice which prevailed.

The question now arose, was it advisable with so slow a pulse, and the strong contractions of the heart, to continue the antiphlogistic treatment which had hitherto been followed. According to therapeutic principles, this must be answered in the negative.

And yet the local inflammation seemed to justify its continuance; therefore it was persevered in without the least reference to either the pulse or the strong contraction of the heart.

On the 22d the same state. This continued until the 27th, at which time the pulse seemed as if it had increased a few beats. On a more accurate examination this was confirmed, and was hailed as a very favourable omen; indeed, expectation was greatly raised in consequence.

On the 28th, the pulse had increased to 24, and the pulsation at the back seemed to have decreased in strength; respiration still 16, but deeper and more regular: appetite had increased. The pulse now daily increased up to the 4th of March, on which day it had reached 40; the respiration was normal; the pulsation at the back had disappeared. The appetite had returned, and the patient was considered as "cured," all medical treatment being discontinued. With restriction as to diet, the case was dismissed.

On the 30th, twenty-six days after she had been discharged, the mare, which had been put to her exercise in harness, did not go so well, and bore heavier on the reins than usual. On examination it was found that the pulse had again decreased to 36 per minute, and that some detached beats were also detected at the back. This led to the supposition that the inflammation had returned in the artery, and that the thrombus was again forming. The mare was, therefore, again put under the former treatment and restricted diet.

On the 31st the pulse had decreased to 30; the pulsation at the back ranged from 8 to 10; and respiration had slightly increased. To avoid repetition, it will suffice to state that six days after this the pulse had decreased to 18; at the back it had increased to 18; and the respiration was likewise 18 per minute, and synchronic with the pulse. This state lasted till the 10th of April, at which time the pulse again increased, and the respiration became normal. The term of the relapse lasted eighteen days; and if the mare had lost much condition in the first attack, she was now reduced to a skeleton. By care, however, she soon recovered her former condition, and at the end of three weeks was again put to her usual quick service, in which she continued without any similar attack until October 7, 1848, when, through a kick received in the thigh from another horse, her tibia was fractured, and on account of this she was destroyed.

THE AUTOPSY shewed the posterior aorta of the natural size; but its tunics were much thickened, hard, and inelastic at the part where the mesenteric artery is given off. The anterior mesenteric was, at its origin on the left side, considerably enlarged, forming a sort of *cul-de-sac:* its coats were hard and inelastic. The posterior or cœliac artery was also much distended at its ori-

gin; its tunics likewise thin in several places, though in others much contracted in caliber, and of a knotty appearance. From these appearances it seems that this mare not only suffered from aneurism of the anterior mesenteric, but likewise from the same affection in the posterior and its ramifications. The thickening of the coats, the diminished elasticity and contraction, as well as the knotty appearance, shewed that this was the result of inflammation with which the aneurism had been complicated.

From the experience of conclusive observations of these four cases, Herr Röhling draws the following conclusion:—Aneurism of the large arteries, in any of the cavities, particularly the aorta or the mesenteric, may be ascertained by certain signs, through which a sure diagnosis might be established. The surest of these signs is *the pulsation at the parts.* This is caused by an obstruction of the circulation in the aorta, and by the formation of a thrombus, which is the result of inflammation not only in the anterior mesenteric artery, but also in the aorta. Besides this pulsation at the back, there is another symptom which is equally of great importance, and this is the *slow pulse.* It is true that in Case II there was an increased pulse; but the three other cases were particularly distinguished by the *slowness* of the pulse. It must also be taken into account that the second case was very acute, was accompanied by strong fever, which was by no means the case with the other three. Taking for granted that a slow pulse arises from a deficiency of nervous influence on the vascular system, it is equally an acknowledged fact, from long experience, that an intermittent pulse arises from vascular obstruction in the intestinal vessels. This seems confirmed by the last case, in which an intermittent pulse was observed, which certainly could not have its origin in the nerves of the bloodvessels; therefore the question arises, was not this intermittence of the pulse in the last case analogous to the slow pulse in the other cases, particularly when a few slow beats were found to be followed by a quicker or even increased pulsation? Herr Röhling leaves it to those who are more versed in these matters to decide this point; and at the same time begs to remark, he recollects many cases, in his long practice, which lead him to suppose that the slow pulse does not always arise from want of nervous influence, but may also proceed from *disease of the bloodvessels;* and the Cases I, III, and IV, go far to confirm this opinion. As to the etiology of the aneurism of the mesenteric artery in these four cases, in none of them could it be traced to any particular cause. All the subjects were employed in a more or less quick service; but no one was hard worked.

Magazin für die Gesammte Thierheilkunde, Berlin 1849.

Contagiousness of Strangles.

The Veterinarian for January contained an extracted article on this subject, shewing that the old French veterinarians, deriving their authority from Solleysel, entertained the notion that strangles was a contagious disease; one that was afterwards laid aside as erroneous; nor has it been until late revived, and now only by some of our French brother professionals. In the issue of the "Recueil" now before us, M. Reynal, Clinical Professor at the Alfort School, submits a number of observations corroborative of this opinion; one to which, after some years of opposition, he has felt bound to yield, from having been so circumstanced as to have under his immediate observation numbers of strangled horses which in the most striking manner communicated the disease to sound horses associating with them. Such remarkable transmission would indeed have surprised him had the subject not been, by so distinguished a veterinarian as M. Damalix, senior veterinary surgeon to the 1st Lancers, repeatedly brought to his notice. M. Reynal follows these preliminary remarks up by bringing before us many striking observations, several noted by M. Damalix in his own regiment, shewing how young horses having strangles, and put into stables with horses of adult age, doing their duty, have communicated the disease to those of the latter who have stood in adjoining stalls, though some few have only exhibited the disease in the catarrhal form. Even the foal has been known to suck the disease from its dam.

Moreover, experiment has been had recourse to, to inoculate for strangles.

M. Damalix smeared with a sponge impregnated with matter taken from the abscess of strangles, twice daily, both sides of the pituitary membrane and the internal surfaces of the linings of the eyelids, in a sound horse, about to be cast for spavin. This was continued for seven days. On the eighth, he remarked, the horse had lost his appetite, had commenced running from both nostrils, coughed softly and loosely, had swelling under the jaw, which ended in resolution; all the symptoms terminating eight days from their commencement.

It has been remarked, that strangles is more surely communicated at an early than a late stage; and in a certain form more readily than in others. Strangles will assume the herpetic character, will simulate farcy and glanders, will settle in the mesenteric glands or in some traumatic lesion or consecutive cicatrix, as for example after castration. In regard to contagion, may be mentioned as most readily communicable that form of strangles which assumes the

character of phlyctenoid herpes of the lips, nose, and pituitary membrane.

Recueil de Méd. Vét., Nov. 1849.

THE SPAYING (OR CASTRATION) OF MILCH COWS.

OUR readers have already been made acquainted with the persevering efforts with which M. Charlier, of Rheims, pursues experiments, commenced some years back, on the castration of milch cows*.

Should he succeed in his object, it will turn out of vast importance to farmers and dairymen.

The following letter from the mayor of a commune in France, in which M. Charlier had operated on two cows, has been presented to the public by M. Bouley, from the circumstance of its author being, as a non-professional, an entirely disinterested party.

No person hesitates to admit the advantages derivable from the castration of stallions and bulls; I do not hesitate to aver, that equal, if not double, advantages are to be derived from the same operation performed on cows.

It is to America we are indebted for this discovery. In 1832, an American traveller, a lover of milk, no doubt, asked for some of a farmer at whose house he was. Surprised at finding at this farm better milk than he had met with elsewhere, he wished to know the reason of it. After some hesitation the farmer avowed that he had been advised to perform on his cows the same operation as was practised on the bulls. The traveller was not long in spreading this information. The veterinary society of the country took up the discovery, when it got known in America. The English, those ardent admirers of beef-steaks and roast beef, profited by the new procedure, as they know how to turn every thing to account, and at once castrated their heifers in order to obtain a more juicy meat†. The Swiss, whose principal employment is agricultural, had the good fortune to possess a man distinguished in his art, who foresaw and was anxious to realize the advantages of castrating milch cows. M. Levrat, veterinary surgeon at Lausanne, found in the government of his country an enlightened assistant in his praiseworthy and useful designs, so that at the present day instructions in the operation of spaying enter into the requirements of the programme of the professors of agriculture, and the gelders of the country are not permitted to exercise their calling until they have proved their qualification on the same point.

* Articles on the subject will be found in THE VETERINARIAN, vol. vii, viii, xi, and xxi.—ED. VET.

† Whereabouts? In America? Certainly not in Britain that ever we heard of.—ED. VET.

At length the operation reached France, and to come, without further prefatory remark, to M. Charlier, its espouser and promoter, we may say he has, at the sacrifice of his peace of mind, his repose, and his humble fortune, exerted every effort in the demonstration of its utility and promulgation throughout his country; and for his exertions has, among other acknowledgments, received the silver medal of the academy of his own city, Rheims. In a word, the cause involving the spaying of milch cows is gained.

M. Renault, the director of the Alfort Veterinary College, says of the operation—"Providing the results of the fresh trials about to be made come to confirm those already obtained, they will open a fresh field of productiveness and profit to agriculture." Anon, we shall shew that such expectations are no longer conditional.

M. Bouley, Professor at the Alfort Veterinary College, and Chief Editor of the *Receuil de Méd. Vét.*, has said—"Notwithstanding the numbers of experiments already instituted to demonstrate the advantages of spaying milch cows, this operation is known or practised but in few parts of France. And at this we are not to feel surprised. In such a matter as this, what becomes necessary to enforce conviction is not recommendation, but *example*, perseveringly kept in view for a series of years; demonstrating at once the harmlessness and advantages of this new method of rendering cows more useful as well for the production of milk as of meat."

"It is to be regretted that, published as this operation has now been for twenty years, the prosecution and appreciation of it have been left in the hands of isolated experimenters. The results of their labours, notwithstanding the knowledge and good faith of the labourers, cannot impress the mind of the public like experiments zealously carried out under the direction of superior powers, with the impartiality and disinterestedness such administration is alone capable of," &c. &c.

To queries and doubts such as these the best replies will be, the several answers given to the questions of a committee appointed by the Rheims Academy to investigate the matter, and to take sufficient time—which would necessarily be of some length—in doing so. To the question put by the committee—

1st. Is the spaying of cows a dangerous operation?

The answer is—This operation in itself involves no more danger than many others of as bold a character (as puncture of the rumen), which are performed without accident by men even strangers to the veterinary art. Two minutes suffice for extraction of the ovaries; two minutes more for suturing the wounds.

2dly. Will not the spaying of cows put an end to the production of the species?

Without doubt, this is an operation which must be kept within bounds. It is in the vicinity of large towns that most benefit will be reaped from it, where milk is greatly sought after, and where pasturage is scanty and consequently food for cows expensive. On this account, it is not the practice to raise calves about the environs of Paris. Indeed, at Cormenteuil, near Rheims, out of one hundred and forty-five cows kept, not more than from ten to fifteen calves are produced yearly.

3dly. Is spaying attended with amelioration of the quality of the meat?

That cows fatten well after being spayed is an incontestible fact, one long known to agriculturists. For many years past this operation has been practised in England*, Germany, Switzerland, and the United States, &c., with the sole object of obtaining an augmented quantity of meat of an improved quality, superior even to ox beef.

4thly. Does spaying prolong the period of lactation, and augment the quantity of milk?

The cow will be found to give as much milk after eighteen months as immediately after the operation. (It is to be observed here, that the committee have not had under observation M. Charlier's cow-house for longer time than this.) And there was found in quantity, in favour of the spayed cows, a difference of nearly eight hundred and fifty pints yearly.

5thly. Is the quality of the milk ameliorated by spaying?

To resolve this question, we have thought proper to make an appeal to skilful chemists resident in the neighbourhood, and they have determined that the milk abounds more by one-third in cheese and butter than that of ordinary cows.

(Laloulette, Mayor of Brognon.)

Recueil de Méd. Vét., Dec. 1849.

Home Extracts.

Visit to the North-East of Europe.

By the Author of the Late Struggles of Abd-el-Kader.

St. Petersburgh, March 1850.

The horses of Siberia furnished a subject on which, a short time since, I sent you some interesting details, taken, for the most part, from *Le Journal des Haras et de la Chasse,* but illustrated

* This is the first time we have heard of it.—Ed. Vet.

somewhat with circumstances the knowledge of which is attained without difficulty by any one who has advantages of society here.

If the horses of the Steppe be an entertaining topic, as indeed they are, the tamer horses which, in the more popular provinces of this huge country, subserve its material interests, afford details equally interesting, and a study equally profitable. The immense number of these animals, and their unheard-of cheapness—for in some places you may buy a shaggy-looking but hardy and serviceable nag for a few shillings—not only enable Russia, with its far-separated provinces, to await more conveniently than would otherwise be possible the increase of its railways, but to equip well, and at small cost, a countless and mighty cavalry.

The English reader will be curious to know whether the Imperial Government leave this element of wealth and strength to the wild chances of Nature for improvement or deterioration; or, if not, what means are taken to meliorate the breed and condition of Russian horses. I have some facts to give you on this head; and they will be not inaptly introduced by a little event of the other day, related in the *Gazette* of the Academy *(Russe)*.

This event was a race, but not such a race as we can see in England. To see such a contest, even in books, we must recur to the Greek poets, and the accounts of the Olympic games, and the kindred festivals of antiquity. It is not that the race of which I am now speaking bore the slightest proportion, in magnitude of scale or excellence of performance, to those wonderful examples of magnificence and skill; but at least it was of a similar character. It was a chariot-race. The chariot used for the purpose is national to Russia, a peculiarly light and airy vehicle, built for a certain number of horses, generally three. When made in this manner, it is called the "troïka."

The races of February, says the *Gazette* of the Academy, had excited the curiosity of the public to the highest pitch, so that they attracted to the ground almost the whole of the population of the capital (Moscow) Four equipages of the troïka kind were to contend for the palm They belonged to MM. Smaguine Kozakoff. and Lanskoi, and to Prince Tcherkassky. The high-road had been appointed for the course, and the distance was to be thirty versts*. The race was to be against time, without second trial.

The struggle began between the troïka of M. Smaguine and that of M. Kozakoff. The former reached the goal in fifty-nine minutes thirty seconds, a rate of speed unheard of till then for teams of that nature. The rival chariot had given up one of its horses after two-thirds of the run, and reached the winning-post five minutes later.

* A Russian verst is two-thirds of a mile: three versts being two miles.

It was now the turn of the other two vehicles, drawn by thoroughbreds. Owing to the fall of one of his horses, Prince Tcherkassky had to relinquish the contest. Meanwhile, M. Lanskoi's team had shot a-head in fine style; and when they had passed the twentieth verst his horses, as if only just breathed, burst into still freer pace, and traversed the rest of the run, hardly seeming to touch the ground, and coming to the winning-post in fifty-three minutes fifty-nine seconds; so that they beat those of M. Smaguine by five minutes and thirty-one seconds.

Often, previously, M. Lanskoi's horses had run in saddle races, but always without success; therefore they must be regarded as horses of average quality. The test which they have in this instance so successfully undergone only seems to indicate that the best horses of the mixed breed cannot compete with true thoroughbreds in any labours requiring a combination of activity, muscular strength, and wind. The case in point will no doubt prove instructive to breeders. So far the *Gazette.* Arrangements of a practical tendency are made for encouraging these evidences, among the Russians, of the great attention they are giving to the improvement of their horses. But to ascend from particulars to generals: it will, doubtless, be interesting, not only to your sporting and military, but to your mercantile and politico-economical readers, if I now add a few details of the administrative labours of the Imperial Government in this field of important interests; material rather than moral interests indeed, but not to be neglected by any wise ruler of a civilised nation.

As the circumstances I have related concerning the little event at Moscow are derived from the *Russe Gazette* of the Academy, so the details I am about to offer will be condensed from another Russian journal, which is published in the French language, and which is a work of unpretending interest and instructiveness,—the *Journal des Haras et de la Chasse.*

First, with respect to the establishments destined for the breed of horses, there are seven crown studs; two in the Voronega Government (Khrénoff and Tchesmé); four in the Government of Kharkoff (Bélovod); and one in that of Nizni-Novgorod (Potchinki). The first two are for the breed of horses of superior blood, so that the stud of Tchesmé contains race-horses exclusively—that of Khrénoff saddle-horses and roadsters (*trotteurs*). The other establishments produce ordinary horses only, whether for riding or draught.

On the 1st of January, 1848, there were 4767 horses in these crown studs—on the same day last year 4837; making an increase of 70 in the twelvemonth. During the year in question the horses sold amounted in number to 684; of which 595 were the offspring of these studs, and 89 reconditioned from the country

stables. The proceeds of the sale were 82,625 silver roubles and 88¼ kopeks.

The object proposed in the sale was twofold—to supply, no doubt, a productive quality of horses to the labours of the country; but principally to procure funds towards the extinction of a debt contracted in acquiring the grounds of Khrénoff.

The stud grooms and officials (who are furnished with their recruits from among the sons of the subordinate dependants of the establishments and the peasants belonging to them) were, on the 1st of January, 1849 (old style), 3298 in number, including 1310 boys.

With the view of affording an education to the children of these functionaries, the Government has established schools for them, and to these schools the miscellaneous public are also admitted as pensioners. The schools furnish two courses—one elementary, and intended to form the pupils for the more subordinate duties; the other serving as a preparation for the veterinary calling. In 1849 the students amounted to 646 in number; of whom 611 were State bursars, and 35 private pensioners. In addition to these institutions, there is a technical school at the Khrénoff stud, where the pupils are farmed for training grooms and jockeys; and a special stable for racers has been annexed to the establishment.

The capital possessed by this department consisted, at the beginning of 1848, of 108,297 silver roubles 23 kopeks. The year's income was 402,173 silver roubles 94½ kopeks; the expenses in the same period were 432,984 silver roubles 94¼ kopeks; the balance, therefore, was 77,486 silver roubles 23 kopeks in hand on the 12th of January last year.

Besides these more formal institutions, there are twenty-three *country establishments* destined to the improvement of the rural breed of horses. These twenty-three are scattered through twenty-eight governments. So far back even as 1848 their stables numbered no less than 1337 stallions.

In the governments of Yaroslaff, Riazan, Toula, Timbirsk, Khankoff, Poltava, and some others, these stables contain some thoroughbred stallions for the improvement of cavalry horses, and the annual proceeds are carried to the general fund.

At Moscow, moreover, and in the stud of Khrénoff, there are stables established exclusively for the production of a purer breed; and in the twelve months 40,673 mares have been offered at these *country stables*, and 25,397 taken. Indeed, 91,000 have been covered since the recent date of the foundation of these establishments, and at the least sixty-seven per cent. have foaled. The cavalry horses are already bettered in consequence.

For the maintenance of these stables a sum is assessed upon the

taxable matter of 28 governments. In 1848 the cost amounted to 237,028 roubles and 92½ kopeks; and the tax-payers felt the burden to the amount of only one kopek and a seventh a-head. The kopek is the hundredth part of a rouble*.

The next and not the least interesting feature of this useful department is the *races*. There are two kinds of races: First, there are test-races, for the thoroughbreds. Of these, in the saddle, the principal occur at Moscow, Tsarskoé Séloe, and Toula; others, not of such pretension, at Sébédian, Catherinoslaff, Kherson, Simpkeropal, and Kischneff. In 1848, 108 horses ran in the first-class races, and 93 in the second.

Annual races are also established for trotting-horses at St. Petersburgh, Tsarskoé-Séloe, Moscow, Toula, Sébédian, Tamboff, Voroneg, Riazan, and Khozloff. In 1848, 166 horses ran in ninety of these races. The winter races of St. Petersburgh are particularly worthy of notice. At first they were trifles. In 1846 (the year of their foundation) there were but seven during the whole winter; only fifteen horses were entered, and the prizes won scarcely exceeded the value of 1420 silver roubles. In 1848 there were thirty races in the same period; not less than fifty horses ran, and the prizes were worth 10,117 silver roubles. Nine thousand of these were subscribed by sporting individuals, the remainder contributed by the Government; and during the whole year the amount of prizes distributed by the Department of the Studs, for the first-class races alone, was 24,742 silver roubles.

Although the subject of these establishments and regulations is not completed, I must adjourn the remaining particulars to a future occasion; and I will conclude my present account with a little event of a relevant kind.

On the 3d of this month there was a race on the Neva—not a boat race, but a chariot race, over the frozen current. The distance was fifteen versts. Each team of three horses drew the troïka. The first prize, 250 roubles, was gained by a government team of the Petersburgh district; the second prize, 50 roubles, by another mail team of the government of Novgorod. A post vehicle of the Petersburgh government came in third.

The Stud Department gave a silver plate worth 100 roubles, as a prize in another race—*weighted*, over the same ground, or rather the same ice. Each horse was to carry, at starting, including the sledge, a weight of 129 poods. The pood is 40 Russian pounds, and the Russian pound is, I think, one-eighth less than our pound avoirdupois. The weight (nearly fifty-two cwt.) I have mentioned was to be progressively increased till the horse gave in.

The prize was won by Bogatyr, a seven-year-old bay stallion of

* A rouble is a fraction more than 3*s*..2*d*.

M. A. Maximoff, which carried a weight of thirteen thousand two hundred and forty Russian pounds, as far as the three hundred and thirty-ninth sagene. The sagene is just a foot longer than our fathom. The sledge drawn on such occasions weighs as nearly as possible twenty-four poods.

To enter on another branch of this subject would lead me too far at present. But I will take an opportunity of sending you all due details concerning the progress of Russian horses and Russian races.

Morning Post.

EDUCATION AND STANDING OF REGULARLY QUALIFIED VETERINARY SURGEONS.

*** THE following spirited appeal, which, it appears, has been sent "*To the Editor of the Banner of Ulster,*" has reached us through the Secretary of our College, Mr. Gabriel: we transcribe it with pleasure.—ED. VET.

Sir,—MY application to the magistrates at revision sessions to be exempted from serving on the grand jury, and on juries in general, as reported in a recent number of your valuable paper, has directed attention to a subject in which the public are not altogether unconcerned. One ground on which I pleaded for such exemption is the fact that the CHARTER, with the sign manual of Queen Victoria, incorporating the Royal College of Veterinary Surgeons, London, of which I have the honour to be a member, distinctly recognises what was formerly called the *Veterinary Art* as a *profession.* (See VETERINARIAN, vol. xvii, page 186.) By this charter, the provisions of which are ample and very important, the Royal Veterinary College is placed on a footing precisely similar to that occupied by other incorporated bodies of professional men, such as the Royal College of Surgeons, and the Royal College of Physicians.

I am not, however, silly enough to imagine that a royal charter, or even an act of parliament, can *create* a profession: the utmost that, in my mind, can be effected, whether by the collective wisdom or by the Queen in Council, is to *recognise* a profession, when its members have attained the requisite amount of scientific knowledge, and other solid qualifications. The question then is, did the Royal Veterinary College, in these respects, merit the high mark of distinction which her gracious Majesty was pleased to confer? To this it might be sufficient to reply generally, that

such statesmen as Sir James Graham and Sir Robert Peel, who were then responsible advisers of the Crown, would not have been likely to sanction a step of this nature had there not existed good ground for its adoption; nor would the enlightened public opinion of London tolerate the elevation to professional rank of men utterly destitute of professional attainments. But, far from evading specific information, I am anxious that the community should know fully the extent and character of the education necessary to qualify a veterinary surgeon for practising in a manner creditable to himself and satisfactory to his employers. The student of the Royal Veterinary College, London, who means to succeed in his profession, must attend public lectures and examinations on anatomy, physiology, pathology, chemistry, veterinary pharmacy, and therapeutics, besides anatomical demonstrations, and the clinical lectures delivered in the hospital of the establishment. The course embraces at least *two* years, including the hospital practice, which I consider of essential importance; and many students find it indispensable to attend a *third* and even a *fourth* year before they are fully prepared to pass the severe ordeal of the examination for diploma. In these different classes, as I can testify from experience, it is impossible to get forward without hard work and untiring diligence. In addition to the business of the Royal Veterinary College, I attended a course of human anatomy in King's College, London, and the latter did not appear to me to demand a larger amount of minute and persevering attention.

It might be supposed that, after completing this curriculum, success at the final examination is a matter of course. Far from it, as may be evinced by the simple fact, that the *examiners* form a board altogether distinct from the *professors*, and independent of the College. Who were my *teachers* at the Royal Veterinary College? Professor Coleman, president of the institution, the bosom friend of Sir Astley Cooper, Professor Sewell, Professor Morton, Mr. Vines, Demonstrator of Anatomy; and outside the walls, Mr. Youatt, in University College, who is favourably known by his different publications, and Dr. Herbert Mayo, in King's College. Who were my examiners for diploma? Sir Astley P. Cooper, Sir Charles Bell, Sir Benjamin B. Brodie, Richard Bright, M.D., John Aston Paris, M.D., Joseph H. Green, Esq., and Benjamin Travers, Esq., surgeons. The names of these ornaments of the medical profession furnish to the public a sufficient guarantee that no unqualified person would be permitted to rest his false pretensions on the certificate of their approval, and thus impose on the community. The strictness of the examination for diploma is indeed proverbial; and accordingly, although the entrance fee for this examination alone amounts to *ten guineas*—a

sum which is not returned to the student, whether he succeed or fail—yet it is no uncommon occurrence for numbers of the candidates, sometimes amounting to more than one-half, to be rejected altogether by the board of examiners.

There is another criterion, by which some may form a judgment respecting the sort of education to be obtained at the Royal Veterinary College,—I mean the high standard of remuneration adopted with regard to the Professors.

This I do not notice as an objection to the system; for I maintain that it is right and necessary, and sound policy moreover, to pay the Professors liberally, in order to secure for the chairs men of distinguished talent and comprehensive attainments. What, then, is the cost of education in this establishment? I have been informed that the fees payable by a student during the three years of his undergraduate course in Queen's College, Belfast, amount to about *twenty-seven pounds;* and I know that this sum is less than the fees paid by my son for the present year in the Royal Veterinary College, London. Thus the profession of a veterinary surgeon involves not only the mastery of several difficult and complicated branches of study, but also an expense of no inconsiderable magnitude.

The *professional* standing of the veterinary surgeon, I may add, as distinguished from the uneducated practitioner, is recognised in Austria, Prussia, Holland, Belgium, Bavaria, and even in Egypt, and more recently in France, the birth-place of veterinary science. In Great Britain, the veterinary surgeon who obtains an appointment in the army is a commissioned officer taking his place, first as a Cornet, subsequently as a Lieutenant, and finally, after a considerable period of service, as a Captain.

It may be insinuated, however, that I have yet to establish my own claim to the rights and immunities of the profession to which I have the honour to belong; nor can I denounce the insinuation as unreasonable, when I reflect on the number of so-called veterinary practitioners, both here and in England, who hold no diploma from the College, and can produce no certificate of qualification. Some time since, on receiving the appointment of corresponding member of the Council of the Royal College, and being requested to ascertain the name of every veterinary surgeon in this quarter who holds a London diploma, I was able to report no case, with the solitary exception of *my own.* If such documents exist, they seem to be kept a profound secret. As much inquiry and no little misapprehension have been afloat upon this subject, I take leave to say distinctly, though it may savour of egotism, that I am authorised to practise by the diploma of the Royal Veterinary College, London, signed by every member of

the board of examiners; that I obtained the rank of honorary fellow of the London Veterinary Medical Society (being the *third* student from Ireland that won that title from the date of the foundation of the College, 1791); and publicly received "the approbation and thanks" of that body, for my "Essay on the Principles and Practice of Shoeing," which was read and discussed at their meetings; and, in one word, that, by humble but steady and indefatigable exertions, I succeeded in gaining every distinction within the reach of a student of the Royal Veterinary College. From that time till now I have endeavoured to keep up and extend any professional knowledge I had acquired; and I record it with the most grateful acknowledgments to a large and influential circle of supporters, I have not been permitted to fall behind in the practical department.

Permit me to say, in conclusion, that the public should take some interest in securing for the veterinary surgeon exemption from serving on juries; for while the law compels his absence from his place of business, a formidable disease or a bad accident, which would have yielded to seasonable treatment, may endanger or sacrifice the life of an animal, for which the owner would have refused hundreds of pounds.

I am, respectfully yours,
WILLIAM M'KENNA.

Belfast, December 13, 1849.

TRANSFUSION.

THE earliest account of the subject of transfusion that I have met with is in the seventh Number of the Philosophical Transactions, published in 1666, where it appears that Christopher Wren proposed to the University of Oxford, that he thought he could readily contrive a way to convey any liquid immediately to the mass of circulating blood. The proposition being made, Boyle planned an apparatus for the purpose of trying the experiment, the result of which was, that the effects of the poisons used by them, and carried directly into the circulation, were the same as if they had been taken into the stomach. This, and similar experiments, doubtless led to the transfusion of blood from one animal to another, the priority of which, like most experiments of importance, has been claimed by more than one Some French writers will have it, that the subject was spoken of by a Benedictine friar some ten years before the trial made by Boyle; but, as no account was ever

published previous to that in the Philosophical Transactions—and I think a subject so curious could not have remained dormant so long without ingenious men taking it up—the merit ought to be bestowed on Wren as the first who conceived the thought, and Boyle is deserving of the credit of having successfully executed it.

In a pamphlet published in Paris in 1668, the writer observes, that he does not dispute the priority of the *operation* with the English, but insists that the religious Benedictine (whom I before mentioned), Père Dom Robert des Gabets, mentioned the *idea* of transfusion to an assembly of learned men in the year 1658.

Boyle, in his work on the "Usefulness of Experimental Philosophy," mentions, that a Foreign Ambassador, "a curious person, at that time residing in London," called on him, and informed him "he had caused trial to be made of the infusion of the crocus metallorum upon an inferior domestic of his, that deserved to have been hanged;" but, however, this servant was a cunning fellow, for as soon as the experiment had commenced he pretended to swoom, which put a stop to the operation.

A Frenchman, of the name of Denys, first attempted the transfusion of blood into the veins of the human subject; this was shortly after repeated in England by Lower and King. You will find, however, numerous accounts of experiments of transfusion in dogs, sheep, &c., in the earlier numbers of the Philosophical Transactions, particularly in Nos. 20, 25, 26.

Among the miraculous effects said to have resulted from transfusion, I may mention the following:—An old dog, on receiving a quantity of blood from a young one, "did leap and frisk, whereas he was almost blind with age before, and could hardly stir*."

A horse, twenty-five years of age, having received the blood of some rams, became more vigorous, and ate with more appetite than before.

A person, dull and sleepy, after being repeatedly bled, received a quantity of the vital fluid from a lamb, and immediately became light, gay, and cheerful.

A man was cured of an inveterate madness in three months, by transfusion.

A spaniel bitch, twelve years old, a little while after some blood from a kid had been conveyed into her veins, "grew vigorous and active, and, in less than eight days, even proud."

Transfusion was strongly recommended by many foreign authors, particularly to old people, as it is said it would arrest the course of their destinies, and defend them from death. But Lamy opposed it, on the ground that all internal diseases were caused by the im-

* Journal des Savans, No. 5 or 6.

purity of the blood. This opposition gave rise to a great deal of discussion, in which Lamy was severely handled.

But the most extravagant idea was that advanced by M. Denys, the great supporter of the operation of transfusion. "If wine," says he, "is too bitter, we sweeten it; if thick, we are able to refine it; if weak, we can make it stronger; if full-bodied (gros), we can make it less so; and, in a word, that which is spoiled may be corrected by the mixture of certain liquors, which are known to many, and which they practise every day:—So with the blood; if it be too coarse (grossier), we can soften it, and render it more penetrating; if too fluid, we can make it less so; if too hot, more temperate; if too cold, we can raise its temperature; and all this by means of certain bloods, the particular qualities of which are known to those who prescribe them."

Lamy considered that the blood of animals differed in its properties, and that which was suited to the ox was not fit to nourish man. This observation is correct; but, however, he carried his ideas so far as to suppose, that wool would grow on the human body if the blood of the sheep had been transfused into human veins. "It is proper," says he, "that care be taken not to wound the soul by curing the diseases of the body, and not to employ a remedy to blunt the perceptions, and give to the patient brutal inclinations, not at all comformable with his nature. For the inclinations follow ordinarily the constitution of our blood, and the inequalities which we meet with in the minds of men are owing to the diversity of their blood, which furnishes them with understanding more or less proper to the clearness of perception and facility of acquiring knowledge." "I conclude," he adds, "that a man who has received the blood of an inferior animal in his veins becomes dull and loses his wit, and despoils himself of his proper inclinations, and puts on those of that beast*." This opinion of Lamy's met with many friends. In Blundell's Physiological Researches it is said, "When the blood of one genus of animals is added in small quantities to that of another genus, by transfusion, we have reason to believe, in the present state of our knowledge, that no dangerous consequences will ensue."

No subject caused more disputes, or greater animosity at the time, than transfusion. Men were hired by one party, dressed grotesquely with fools' caps on their heads, who mounted stages, and vomited forth all kinds of abuse on the heads of the unfortunate Denys and other physicians who supported it. Satirical pamphlets became very numerous; among which I may mention one entitled

* Lettre écrite à Mons. Morcau, par G. Lamy, A.M., en l'Université de Paris, 1667.

"L'Ombre d'Apollon, decouvrante les Abus, de cette pretendue Manière de Guerir les Maladies par la Transfusion du Sang."

The wife of a madman requested Denys to perform the operation of transfusion on her husband, which, being complied with, the state of the patient, it is said, was greatly improved; a relapse followed, when transfusion was repeated with the like success. Again the madman fell into his former state, and at the urgent entreaties of the wife, Denys was induced a third time to transfuse a small quantity of blood into the veins of his patient. The result was, that on the following morning the man died, and the wife refused to permit the body to be inspected; and not having the means to defray the expenses of a funeral, she walked the streets of Paris, requesting alms of those she met for that purpose. This soon caused the death of the individual, with the circumstances connected with it, to be noised abroad. The enemies to transfusion had now a fine field open to their attacks: they neglected not this favourable opportunity, and many defamatory libels against the Faculty of Medicine followed. Denys insists that the woman was bribed to give false evidence concerning the death of her husband; be that as it may, the case came on before "Monsieur le Lieutenant Criminel" in April 1668, whose sentence was, that any person performing the operation of transfusion, without the proposition having been made, received, and approved by the Faculty of Medicine, should be sent to prison. It appeared subsequently, that the woman had administered a dose of arsenic to her husband. This affronted the dignity of the court physician: a trifling attempt was made to upset this decision; but the subject shortly after coming under the consideration of the Chamber of Deputies, they put on such heavy restrictions, that the matter became gradually neglected, and, I might add, almost forgotten, till revived by Dr. Blundell a few years since. I may mention here, that in a paper published in the Bibliot. Univer., I think in 1821, by Provost and Dumas, entitled, "Examen du Sang et de son Action," &c., some remarks are made on transfusion Their view of the subject differs from Dr. Blundell in this particular, viz., that the fitness of the blood of one animal to the uses of another of a different species depends entirely on the formation of the globules.

For instance, if we inject blood with circular globules into the vessels of a bird, whose blood contains globules of an elliptic shape, the animal ordinarily dies; violent nervous action coming on, which may be compared to what we observe when active poisons have been administered. They conclude, that transfusion on man ought to be condemned as absurd and dangerous, till we have a better knowledge of the active principles of the blood.

THE VETERINARIAN, MAY 1, 1850.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

CONTINUING the subject of the lamentable differences of professional opinion so often heard pronounced in courts of justice when *horse causes* happen to be the cases at issue, and bearing in mind, what was ascertained in our last article, that, next to lameness, disease of the chest is most frequently the question in dispute, it is our intention, first, to examine into the progressive changes of aspect and texture produced by disease in the pleural membrane, and to follow this up by a similar inquiry touching the lungs. In the imaginary case we introduced into our editorial article on the subject, last month, there was not likely to arise any difference on the point of duration or date of actual disease; because the farrier was in attendance almost from the beginning of the complaint, and because the veterinary surgeon, although he had not been called in until the eleventh hour, yet saw sufficient of the case, dead at least if not alive, to enable him to give a straightforward opinion, and such a one, as far as it went, as was likely to prove consonant with that of the farrier. But the latter went farther than this. He felt no hesitation in siding with the opinion of the groom and the suspicions of his master, mainly based upon the *cough*, that the animal was "breeding" the disorder at the time of purchase.

The autopsy of horses dying of disease of the chest shews that anormal changes, either in the pleura or lungs or in both, have proved the cause of death: changes which come under our observation so frequently, and in such a variety of forms, that they will need but to be named to be recognised as old and familiar acquaintances to every veterinary practitioner. In fact, thoracic disease is the bane of horse as it is of human kind, and especially so at the period of the animal's entrance on adult life. How many human beings have fallen victims to pulmonary consumption or decline at from eighteen to twenty-five years of age!—How many horses have died between their third and fifth years, at the very time of

their being stabled and put to work! And these are precisely the cases which we are so often called upon to treat and pronounce opinions upon, not only as to the issue of their malady in their state of suffering during life, but as to the standing and nature of the disease of those that happen to die.

Disease of the pleura *(pleurisy)* is distinguished, by medical men, from disease of the lung *(pneumonia)*; and such distinctions are now made during life with some near approach to the certainty which characterizes them after death; though in horses the *diagnosis* is not commonly so strongly marked as in men; neither are the diseases so clearly separable after death: in the quadruped they run more into each other, usually presenting themselves under the mixed form of *pleuro-pneumonia*. Not that we are to understand from the frightful mortality which an epidemic disease, so called, has of late years been creating among cattle, meaning of that appalling character which has been attached to this word, one that veterinary science has offered, in our estimation, no true or substantial ground for entertaining; but that we are simply informed by it that inflammation has been simultaneously present in both lung and pleura; has extended probably from one to the other, the symptoms before death and the appearances after, affording ground for an opinion as to priority of attack.

The internal or secreting surface of the pleura, when the chest is recently opened, is, in its normal or healthy state, pale, almost colourless, and glistening from the moisture with which it is bedewed; unless the chest should have been for some time lying open, and then, from the air having dried up its natural humidity, the surface of the membrane, though it still appears smooth and polished, has lost its moist and shining aspect. Inflammation, recent in its character, is depicted in the membrane by bright and variegated redness of it, caused by its hosts of capillary vessels being filled with red blood, and distinctly shewing themselves to the observer in the form of a very beautiful network, most conspicuous under the arches of the ribs. In some cases the reddening is pretty general throughout the exposed surface of the membrane. More frequently its intensity varies, giving the surface a patchy or streaky aspect. In all cases the hollows of the ribs exhibit pleuritic inflammation most strikingly and admirably. This

appearance, without secretion—or, rather, with very sparing secretion, since it seldom or never happens there is none—denotes that the animal has died of that acute inflammation of the membrane which the French have called *dry pleurisy*, in contradistinction to the more common form of disease, which is accompanied by more or less serous effusion.

A few hours' sickness suffice for the development of inflammation of the pleural membrane. But pleurisy is a disease of which horses rarely die without its being productive of fluid or solid matters, usually of both, in the cavity of the chest. Commonly, a short time after the inflammation has set in—in some cases, it would seem, almost simultaneous with its attack—the natural serous exhalation of the membrane augments and collects, either, as is usually the case, in the form of a citrine-coloured beautifully transparent fluid; or, as sometimes happens, tinged with blood; or the fluid may be turbid, and exhibit, when combined with solid effusion, *flocculi* of coagulable lymph floating in it.

The effusion of coagulable lymph is a common accompaniment of the serous collection, presenting itself in the shape of plastic layers or masses upon the sides and surfaces of the lungs, with ragged extensions from one to the other, feebly uniting the opposed coated surfaces. Commonly, the effusion of "water" precedes that of lymph; though the effusions often to us appear to have had simultaneous origin. Acute pleurisy will run its course, under treatment, in about three days. It has been known to do so in one. Water, of the yellow limpid description, is usually found in some considerable quantity in three or four days. It has been known to have collected within the first twenty-four hours. Where we have nothing but the *post-mortem* examination to guide our opinion, the consistence and character of the fluid will command our attention: the yellow, limpid fluid, or the same fluid mingled with the red particles of the blood, denoting the most recent date. And the same may be said of the solid effusion: coagulable lymph of a bright yellow colour, and soft gelatinous nature, loosely adhering to the membrane, honey-combed in its texture, and full of serous exudation, being demonstrative of its recent effusion. Beyond this it is extremely difficult, often indeed impossible, to assign any limits of date to the production of

the lymph; unless it be that it has taken on *organization;* and that certainly may be regarded as proof of another advance in the progress of the case, and as such may be set down in our account of its probable duration. At the same time, it must be borne in mind, that bloodvessels generate in albuminous effusions in a wonderfully short space of time: from twenty to twenty-four hours being proved to be sufficient for their formation. Whether they become organized or not, however—for organization does not always follow—these pastic deposits and processes after a time lengthen out and loosen in texture, and display that cellular structure denoted as pseudo-membrane, the cells of which are usually found filled with yellow serous fluid. This change denotes advance commonly of some days; and when this, instead of organization, takes place, and effusion of serous fluid still continues, the case is apt to become sub-acute or chronic, and end in hydrothorax; the issue being probably protracted to the second or perhaps the third week.

Should the inflammation of pleurisy run to an extraordinary height—be of the *acutest* character—instead of serous effusion, or at the time that they are pouring forth "water," the capillaries of the pleura will issue *pus*, and the purulent may be commingled with the serous effusion, giving that a creamy aspect, while at the same time it coats the various layers and masses of coagulable lymph; or, it may collect in considerable quantity in one place or more, and so, by being hedged round by solid lymph, form abscess: a morbid state of parts most likely to degenerate into pulmonary decline, a condition in which, as we all know, our patient may live for weeks or even months. On the other hand, this intense inflammation of the pleura may hurriedly run into *gangrene* of the membrane, of which we recollect to have had one notable instance in the year —28. A four-year-old horse was seized with the usual symptoms of acute pleurisy. The case soon betrayed every sign of dissolution, so that it came to an end in the short space of forty-eight hours. The *pleura costalis* shewed the intensest inflammation. The *pleura pulmonalis*—we give it in the words recorded—"exhibited a *green* hue." And there were from twelve to fourteen pints of serous effusion.

In pleurisy which has degenerated into, or from the first has been, *sub-acute* or *chronic* in its character, changes are apt to take

place in the substance and texture of the membrane which always denote chronicity or length of standing of disease. The pleura becomes thickened and indurated, and turns to an opaque white in colour; and when coagula are present, they are very apt to take on some such change as we behold in the membrane itself, and while they evince extraordinary toughness, frequently display considerable vascularity.

These summary observations on the morbid changes in the pleural membrane—changes which are so very common in the continually recurring diseases of the chest in horses—it is hoped, familiar as they are to most of us, yet may serve young practitioners as guides, if not to the exact truth in point of the time of their occurrence or duration—at least to direct them out of the way of such gross and unpardonable error as has but too often found its way into the witness-box on the occasion of a horse cause. We wished to have wound up this interesting inquiry in our present Number: we find, however, we must still devote another article to it, to examine the progressive changes the lungs undergo in diseases of the chest in horses.

THE SPAYING—or as the French have denominated it, the *castration*—of cows, is an operation to which our attention is called afresh by an article in the *Recueil de Méd. Vét.* for December 1849, now lying upon our table, confirmatory of one which appeared, we understand, many years back, in the same journal; we believe, from the pen of the instigator of the operation itself, M. Charlier. There is likewise a report of the same operation translated from the *Recueil* into THE VETERINARIAN for July 1848*. The subject is new to us, though not less interesting than to our French colleagues: at least, we have never heard of such a proceeding in any part of Britain; notwithstanding the Mayor of Brognon—in the article on the subject we have transcribed into our pages this month—has it that we are in the habit of practising spaying—as well as castration—in order to render our beefsteaks and roast beef tender and flavorous. Nevertheless, and especially as M. Le Maire gives us English the credit *de savoir profiter de tout*, we are not only by no means unwilling, but feel even very anxious to know the secret of augmenting and enriching the quantity of milk our

* Also in vols. vii, viii, and xi, of THE VETERINARIAN.

cows give us, and of making them afterwards—a sad return!—into beef which shall not be inferior to that of the ox.

M. CHARLIER, a veterinary surgeon practising at Rheims, in France, twenty years ago heard of this operation being practised by some farmers in America, and from some trials which he lost no time in making of it, became so enraptured with the discovery, that night and day he ruminated over it, spending most of his time, as well as *une partie de sa modeste fortune*, in bringing it to the perfection it promised, and making it extensively known. In both these objects, however, even up to the present day, he appears to have failed: he has neither made the spaying of cows public in every part of France; neither has he succeeded in convincing those who are informed of it of advantages to be derived from it such as he has, in his enthusiasm perhaps, depicted to himself. The Academy of Rheims have, it is true, through their commission specially appointed for the purpose, reported favourably of it; but with the Veterinary College at Alfort, on whom we veterinarians of this country mostly rely, the subject seems yet to lie shelved in doubt and abeyance.

M. RENAULT, director of the Alfort Veterinary College, as we have seen, says in his report of it—"If the result of fresh experiments, at any time to be made, come to confirm those already obtained, a fresh source of productiveness and wealth will be opened to agriculture." And M. Bouley, professor of the same school, and chief editor of the *Recueil* is of opinion that, not by advice but by facts alone, perseveringly put forth for a series of years, can the advantages and harmlessness of such an operation be fully impressed upon the public mind.

The first question to be asked in such a matter is, concerning the *safety* of the operation. Can cows be spayed with the same absence of apprehension or alarm as to the result that bulls or horses can be castrated? And can this be done, thus fearlessly, at such age as the cow—which will, of course, be after she has had one or more calves, indeed, turns out best after the third or fourth calf—is in a fit condition for it? Because, unless this be the case, the operation on this account alone must fall to the ground.

Being satisfied about the safety of the operation, the next question is—are such advantages as are represented surely derivable from it, and do no disadvantages attend which may turn

out to be serious drawbacks? (For, as to the performance of such an operation, that we say nothing about, taking it for granted there is no more difficulty about spaying than there is about castrating, when once the *modus operandi* has been surgically described and pointed out.) Will the operation, which of course will render the cow barren, prolong her period of lactation to double or treble the natural term? Will the quality of the milk become improved in consequence of it? Will the barren cow fatten more kindly after she has become dry? since, we apprehend by no means whatever can her milk ever be restored. And will cow beef thereby be rendered equal in tenderness and flavour to ox? For, unless all this can be insured, the operation cannot be said to succeed; or only to succeed in part, supposing it to have the effect of protracting the milking period only. This alone, however, to cow-keepers in our large towns would be, probably, a very great boon; a consideration likely to induce them to have frequent, if not constant, recourse to the operation. We would call Professor Simonds' attention to this subject. Prominently as he is engaged in cattle practice and research, this is a subject that might turn out well worth his while to investigate. He, and others who may desire it, will find full particulars as to the desirability of the operation, the period and age when it is best performed, and the results that have been obtained in the experiments M. Charlier has already instituted, in the volumes of THE VETERINARIAN named, under the heading "Spaying or Castration of Milch Cows."

PROCEEDINGS OF THE COUNCIL OF THE ROYAL COLLEGE OF VETERINARY SURGEONS.

Sitting of October 15, 1849.

Present,—The PRESIDENT, the SECRETARY, the TREASURER, Messrs. JAMES TURNER, WILKINSON, ERNES, WITHERS, BURLEY, SILVESTER, STANLEY (V.P.), ROBINSON, PRITCHARD, MAYHEW, ARTHUR CHERRY, and KING.

The minutes being read and signed, the Report from the Committee appointed to consider the Bye Laws was made, and the result of their labours, in the form of a new code of Laws, was submitted to the Council; at the same time it was stated, that the ob-

ject of the Committee was, to combine all those points which seemed desirable, leaving room for necessary curtailment and revision of some parts upon which it would be essential that the united views of the whole Council should be taken.

The clauses, eighty in number, were then read, and discussed seriatim. A long discussion ensued on some of them: some were struck out, others amended; but the majority were allowed to stand as prepared in Committee; but with the full understanding that the clauses were still open to revision or omission.

The final adoption of those clauses which related to the curriculum of study was left open, as the adoption of either the one or the other view would depend on the result of proper legal opinion; and this meeting the feelings of the Council at large, it was acted on.

The whole of the discussion on the admission or rejection of certain clauses entirely hinged on the proper legal interpretation of certain passages in the Charter; in other respects there was a singular unanimity of feeling on the merits of the questions themselves.

It was, therefore, moved by Mr. *Field*, and seconded by Mr. *Turner*, that the documents, as prepared and amended, be submitted for opinion to Sir John Jervis, the Attorney-General.

It was also moved by Mr. *Arthur Cherry*, and seconded by Mr. *Pritchard*, that the same course be adopted with regard to Sir Frederick Thesiger;

And it was also moved by Mr. *Turner*, and seconded by Mr. *A. Cherry*, that the same course be adopted as regarded Mr. Jago, an eminent barrister of the Irish bar.

Each of these motions was carried without opposition.

Mr. Arthur Cherry then moved that the Solicitor to the Council, Mr. Garrard, be instructed to submit the requisite documents to the above legal gentlemen, to ascertain if any of the propositions were contrary to the provisions of the Charter, or repugnant to the laws of the realm; which being carried, the Council broke up at a late hour.

Sitting of December 28th, 1849.

Present,—The PRESIDENT, the SECRETARY, Messrs. GODWIN (Birmingham), JAMES TURNER, WILKINSON, ERNES, HENDERSON, and ARTHUR CHERRY.

The minutes having been read and signed, and this being the quarterly meeting, in conformity with the usage of the Council, any reports that might be considered necessary and not the result of any special direction of the Council, were to be brought forward.

The Secretary reported, that the instructions as relating to the submitting of the proposed code for legal opinion had been complied with, and that Mr. Garrard had received the proper instructions thereon.

The Registrar also gave in a report of matters relating to his department, stating that the names of those who had been admitted during the last year's examinations had been published through the *Times* and *Bell's Life* newspapers, which journals had given insertion to them in the most handsome manner.

The Secretary brought forward his motion respecting the further suspension of the apprenticeship clause of the by-laws, as such had been done before; and as the whole question of our by-laws was now undergoing revision, it would be desirable to continue the suspension for the present year, as had been done in the last year.

Mr. Ernes seconded the motion.

Mr. Arthur Cherry supported it.

No opposition was offered to its passing. Several notices of motion were given; and there being no further business before the Board, the proceedings terminated.

Sitting of March 27th, 1850.

Present,—The TREASURER, the SECRETARY, Messrs. JAMES TURNER, SPOONER (Professor), WILKINSON, BURLEY, ERNES, BRABY, A. CHERRY, and HENDERSON.

The Secretary stated that, in consequence of the severe indisposition of their respected President, it would not be possible for him to attend and preside as usual at the meeting of this evening; and as there was no one of the Vice-Presidents then present, a Chairman must be elected, and he should propose that Mr. *Henderson* do take the Chair.

Mr. Turner seconded the motion.—Carried.

This being a Quarterly Meeting, the usual Reports were presented.

The Treasurer laid before the Council the finance accounts for the past year, by which it appeared that, all debt and expences being paid, there was a considerable balance in the bankers' hands.

Mr. Arthur Cherry moved, "That the accounts be audited; and as there was no provision made for, nor time to admit, that two members of the body corporate (not members of the Council) should be appointed, and meet for this purpose, he should propose that Messrs. *Braby* and *Ernes* be appointed for that purpose.

Mr. Gabriel seconded.

A discussion ensued, but terminated in the motion being carried *nem. con.*

The Registrar gave in his Report.

Mr. Field moved, "That a Committee be appointed to draw up a draft of the Annual Report, and that Messrs. *Ernes, Gabriel,* and *Arthur Cherry* constitute the same."

Mr. Turner seconded the motion.—Carried.

It was ordered, that the draft of the Report and the Audited Accounts be laid before the Council on the 10th April, that they might be complete previous to the Annual General Meeting, which would be, this year, on Monday, May 6th.

Mr. Arthur Cherry moved, "That at the next examination of the Board acting for Scotland a deputation should be present; and he should propose that the Secretary, as the best acquainted with the matter, be so appointed."

Mr. Turner seconded the motion.

An active discussion ensued, not so much on the merits as on the nature of the duty to be performed.

Mr. Arthur Cherry explained, that the object he had in view was that of obtaining correct information for the guidance of the Council. Many complaints had been made of irregularity, and though these had not been made out or substantiated, yet it was highly important to have such information as could be available; and as there were two vacancies in the medical portion of the Board, it would be desirable to obtain this knowledge previous to filling them up; and he wished it to be distinctly understood, that in proposing the motion he only intended that the deputation should be one for observation, and to report on all matters relating to the interests of the Royal College of Veterinary Surgeons as might seem necessary or fitting.

The motion was put and carried, there being only one dissentient.

As there was an absolute necessity for the presence of a Vice-President to sign cheques and other documents, it was proposed by *Mr. Wilkinson*, and seconded by *Mr. Turner*, "That Mr. Henderson be elected a Vice-President, in the room of Mr. Read, recently deceased."—Carried.

The requisite formalities were then gone through.

The usual advertisements for convening the General Meeting were ordered.

As nothing had been received from the Solicitor on the subject of the barristers' opinions on the proposed bye-laws, *Mr. Wilkinson* moved, and *Mr. Braby* seconded, "That the Secretary be

directed to apply by letter to the Solicitor, and to request that inquiries be made respecting the obtainment of the opinions."—Carried.

Adjourned.

Sitting of April 10th, 1850.

A Special Meeting.

Present—Mr. Henderson (V.P.), the Secretary, the Treasurer, Messrs. Arthur Cherry, Braby, Wilkinson, Ernes, and Goodwin.

In consequence of the continued severe indisposition of the President, *Mr. Henderson* took the Chair.

The minutes being read and duly signed,

The Secretary brought forward the draft of the Annual Report, in which the Committee agreed. It was a short one, but in their opinion it embraced all the important and necessary points; and, having been read, and a short discussion ensuing, it was moved by *Mr. Goodwin*, and seconded by *Mr. Field*, "That the Report be adopted."—Carried.

The Auditors then made their report, by which it appeared that there was a balance in hand of £212..5*s*..7*d*., and that all debts and accounts had been discharged up to the termination of the official year, the 1st of April. It further appeared, that there had been received from the sources opened by the Charter, and without extraneous aid, from the obtainment of the Charter in 1844 up to the present time, a period of six years, £3070..16*s*. 8*d*.; and payments, which embraced the whole expenses of the Charter itself and law proceedings connected therewith, the plate for diploma, herald's office for arms, and other incidental expenses, amounting to a very large sum: these, together with the necessary working expenses of the Charter, amounted, in the gross, to £2858..1*s*..1*d*.

Mr. Arthur Cherry moved, and *Mr. Gabriel* seconded "That the Report be adopted"—Carried.

A letter from Mr. Garrard, the solicitor, explaining that the delay in the obtainment of the legal opinions sought did not rest with him, was then read.

Mr. Wilkinson then addressed the Chairman, and stated, that he hoped any thing he was about to say would not be lightly passed over, and he also trusted that the subject would receive every consideration. He then proceeded to say, that he deplored that there had been for a long time a feeling so discordant existing between the Council and the Professors;—that, from what had passed between the Professors and himself, he felt assured there were only

a few trifling points, the conceding of which would put an end to these disputes;—and he entreated the Council to direct that a deputation be appointed to wait on the Professors.

The Council, having listened with the greatest patience to all the points urged by Mr. Wilkinson, generally wished to know if Mr. Wilkinson was empowered to take this step. He replied that he was not; but had done so on what he believed to be an important point, and considering that such a step could be brought about, and all parties satisfied.

Mr. Goodwin opposed any deputation; he did not think that the Council could entertain the question.

Mr. Field took the same view.

Mr. Henderson followed in the same course. All deplored the existence of such a state of things, but knew not the way to end them; every attempt had hitherto failed.

Mr. Ernes said, that as he had supported the same view on a former occasion, he should do so now.

Mr. Arthur Cherry said, that on a former occasion he had opposed a similar proposition, that he should do so again, and upon several points: the first was, that he did not think that the Council ought to make any such appointment; that even if they did, it should not be done without notice being previously given; that he could not forget that a meeting, at the request of the Professors, had been held between them and certain high and influential members of that Council, though in their private capacity, and that certain terms were agreed to preparatory to their being laid before the Council; but that, almost directly after, the Professors had repudiated the agreement then entered into;—that such had been the fate of every attempt hitherto;—that, on the grounds of want of faith, he did not think that the Council should adopt the course proposed;—and that the Council ought to have a directly authorized application.

Mr. Gabriel quite concurred in the views taken by Mr. Cherry; it was briefly a recapitulation of what had previously been done.

Mr. Goodwin fully supported the same view.

Mr Field, also, supported and confirmed it: as an individual he was ready to do every thing in his power, but he could not, as a member of the Council, agree to the proposal.

It was then directed, that the Council could not entertain the question, as being beyond their ken in that form.

Adjourned.

A conversation then ensued on this important topic, and each member, in his individual capacity as a member of the body corporate, gave his unqualified assent to have a meeting at any time,

to be held at the Freemasons' Tavern, between themselves or any other member who might wish to be present, and the Professors and any others they might wish on their part, to enter into the several points, and calmly and dispassionately discuss them; that the points as stated by *Mr. Wilkinson* were not very difficult of adjustment, nor did there seem to be any reason why they should not be conceded; but, at the same time, it must be distinctly understood, that the result of that meeting should be laid before the Council, and that no repudiation should be attempted.

Every member present authorized *Mr. Wilkinson* to make use of the above in the way that seemed the most fitting in his mind; and that gentleman was evidently much pleased at the calm and dispassionate manner in which the whole had been reviewed and met, and at the undisguised expression of good will and good feeling: where he had looked for opposition, he met support.

[We have given this conversation, as we think it of importance, as shewing the feeling of those members of the Council who take the most active part in the proceedings; that their opposition has not arisen from personal feeling, but from necessity.]

MISCELLANEA.

Shyness and Timidity.

In common horse language, these propensities are confounded one with the other, or else no proper and right distinction is made between them. A horse may be timid without being shy, though he can hardly be said to be shy without being timid. Young horses in their breaking are timid, frightened at every fresh or strange object they see. They stand gazing and staring at objects they have not seen before, fearful to approach them; but they do not run away from, or *shy* at, them: on the contrary, the moment they are convinced there is nothing hurtful in them, they refuse not to approach and even trample upon them. This the shy horse will not do. He cannot be persuaded to turn towards or even to look at the object he shies at; much less to approach it.

Timid horses, through usage and experience, get the better of their timidity, and in time become the very opposite to fearful; but shy horses, unless worked down to fatigue and broken-spiritedness, rarely forget their old sins. The best way to treat them is to work them, day by day, moderately for hours together, taking no notice whatever of their shying tricks, neither caressing nor chastising them, and on no account whatever endeavouring to turn their heads either towards or away from the objects shied at.

Anon on Horseback.

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LAMENESS IN HORSES.

By WILLIAM PERCIVALL, *M.R.C.S. and V.S.*

LAMENESS ARISING FROM LACERATION OR RUPTURE OF MUSCULAR FIBRE.

ACCORDING to our notions of the general or ordinary causes of lesions of muscular fibre, if men are not infrequently the subjects of it, horses seem in our eyes to manifest double the liability. Muscle or flesh, I need not tell my reader, is the tissue in an animal body through which, by some inexplicable *vis movendi* it derives from vitalization, all the motions of the body are performed; its more obvious function being that of *locomotion*, or, in other words, enabling the animal to move from place to place. Nobody could possibly imagine, from seeing flesh hanging up in a butcher's shop, how wonderfully vitalization alters its properties. While the fleshy fibre out of the body will rend or break with but comparatively little force or weight applied to it, the muscle or living fibre is capable of resisting force or weight to a very great amount. But it is not so much the amount of force or weight applied as the suddenness of its application, which, in the living body, is apt to be followed by rupture or rend of muscular fibre. A man feeling conscious in his own mind of any act he is about or likely to perform, prepares his mind and his muscles accordingly; and so, though the feat be great and trying, it rarely happens, unless through some unforeseen occurrence, that harm results. Now and then, however, it occurs that the mind and the muscles are taken by surprise, and then accident is very likely to follow; as when a person, in descending a strange staircase in the dark, chances unexpectedly to step down two stairs at once when he had prepared himself only for descent equal to one. But a horse must be a great deal more subject to such like untoward events than a man.

How often must he have to perform what he little anticipated he was going to do!—how frequently must he be forced or see occasion to be obliged to perform so much more or so much less than he had reckoned on, and more especially while in active pursuit in hunting or steeple-chasing!—and therefore we have a right to suppose that muscular lesion is a less uncommon cause of lameness than we are in the habit, in our practice, of providing for or seeking after. Because we cannot demonstrate to sight or feel the laceration or rupture that has taken place, we are apt to fancy or frame some other cause for the lameness; and the horse, through being laid up, in time recovers, and we, continuing in the belief that our supposition was correct, are left uninformed of the true cause of the lameness, notwithstanding the horse has got sound again.

The usual way in which such lamenesses have their origin appears to be during some act of hard galloping or leaping;—stepping unguardedly into a rabbit-hole, or upon some surface which gives way under the animal's weight. The horse immediately, or soon afterwards, falls "dead lame;" he can hardly limp, perhaps, out of the field or wood in which he happens at the moment to be going. He is said to have "sprained" his leg; but no sign of sprain is to be found. Perhaps, it is thought, he may have "picked up something" in his foot; but examination of that part is attended with no better success than the search after sprain. The case is vexatiously obscure: nothing can be seen, nothing felt, to account for the lameness. If the ailing member be a fore leg—as most probably it is—the limb is taken up into the arms of the examiner with a firm and close grasp, so as to enable him to swing it backward and forward; and he fancies one or both of these motions "hurts" the horse: still, there is nothing to make him quite certain that the horse, from such rough handling, does not *feign* being hurt; or that he in reality is not hurt, not in consequence of any lesion of muscle, but purely from the ordeal the examiner is putting him through. Still, however, I do not mean to deny that there may and do occur cases in which laceration or rupture, or other lesion of muscular fibre, if it exist, is likely to be discovered by manual examination of this and other kind, though a good deal in all cases of muscular rend or hurt must be determined through observation of the alteration occasioned by the lesion in the horse's action.

Some years ago a very remarkable—indeed, as I thought at the time of its occurrence, an *unique*—case of ruptured muscle happened in my practice; but I have since found that so far from the case, rare as it may be, being unparalleled, we have only to turn over the leaves of Solleysel to meet with accounts of what appear

to be the same lesion, under the head of "RELAXATION AND STRAINING OF THE MASTER SINEW:" more properly, in accordance with the present state of veterinary science, denominated

RUPTURE OF THE GASTROCNEMIUS MUSCLE.

A 20, black troop-horse, four years of age, in the act of longing early in the morning of the 16th of May, 1843, fell forward upon his head and knees, with his hind limbs left sprawling in the fall in an extended position behind him. He lay for a couple of seconds, then rose up, and walked twice round the longe. Finding, however, that he had lamed himself in one of his legs, the rough-rider, who had been longing him, returned him to his stable. At nine o'clock A.M. I had him led out in hand. He walked tolerably well; but when he came to trot, or even to turn, there was manifest a giving way of the off hind leg, owing, to appearance, to a want of contraction in the muscles bracing the tendo Achillis. This induced me at once to suppose there must have happened some rupture or laceration of the fibres of the *gastrocnemius* muscle; and yet my most careful examinations failed to detect any defalcation or defect thereabouts. In fact, I could make out nothing more than unusual mobility of limb. I prescribed a high-heeled shoe, quietude, a warm bath, and a dose of physic.

On the 18th May—two days after the accident—the fore part of the hock was observed to be considerably swollen; and the swelling was tense and warm to the feel, as though some sprain of the part had taken place. In another two days this tumefaction had begun to subside, so that by the 25th—a week from the accident happening—the hock was well again.

The next time I saw the horse walk out—which was on the 2d of June—I could not perceive any alteration in the action of the limb, either for better or worse. There was evident the same laxness or looseness in the tendo Achillis; the same instability and rolling movement in the limb as he walked along; nay, the latter was very observable in the stall even every time the horse's hind quarters were turned from side to side: there was manifest want of bracing of the tendon in question. Instead of retaining that well-known tensity and firmness of feel which it possesses so long as the foot rests upon the ground, the tendon becomes so slack that it absolutely wrinkles, or serpentines in its course to the hock, the moment the limb is lifted off the ground. No other view, in my mind, could be taken of the case than that expressed here in its heading. It will be recollected that the two gastrocnemii muscles cross each other in their course from the back of the stifle to the hock, and that, in their composition, fleshy fibres are interlaced

with tendinous ones. Some of these had, no doubt, given way in the sudden and severe extension to which they had been subjected in the fall; but by no inspection or examination of other professional men—to whom the case was shewn—could discovery of the seat of lesion be made.

THE TREATMENT OF THE CASE, in addition to what had been already done, consisted simply in forbidding all exercise or even motion of the injured part. The horse was kept tied up in his stall until the Regiment of First Life Guards marched—which was on the 1st July—to Windsor; and subsequently was enforced the same standing, unmoved, in the stable; he not being suffered to lie down or even to turn round in his stall. He was kept confined in this manner for four months, and then had not lost either his lameness or rolling gait of hock. Thinking that exercise might now prove beneficial, he was on the 2d of October turned out to strawyard, with his high-heeled shoe on. Five months from his being turned out he was taken up into the stable in consequence of his having become restored to a state of perfect soundness. There was no longer any slackness of tendon; nor was the roll the hock had in motion any longer perceptible.

Solleysel has a chapter headed—"Of the Relaxation and Straining of the Master-Sinew*;" which in a strange and remarkable degree is illustrated by the case I have just narrated, as I think the following extract will prove beyond the smallest doubt. Explaining what he means by the "master sinew," Solleysel commences by saying—"The hough is surrounded with a great sinew, which is divided from the bone by a hollow space where the *vessignons* (capped hocks) are usually situated. This is the biggest and most visible sinew in a horse's body, which by reason of a strain occasioned by hard riding, evil shoeing, going down a steep place, *a slip or fall*, or too heavy burthen, *may be relaxed*, and sometimes disturbed with so much violence that *it becomes moveable like an unbent bow-string.* When a horse walks, *the leg seems to hang at the hough, because its motion is not regulated by the master-sinew;* and you would even sometimes imagine that the bone was broken. *When a horse stands with his foot fixt on the ground, the hough being extended in its natural posture, there is so little appearance of any grief in the leg, that it seems perfectly sound;* but if you handle the master-sinew, you will find it more moveable than that of the other leg; and *if you make the horse move his hinder parts, you will immediately perceive the sinew to be as loose and infirm as if it were broken.*"* * * "Some horses, contrary to expectation of all who saw them, have been

* Op. Cit., Part II, Chap. xcix, p. 273.

cured with the following remedies; but *the cure of such strains is not the work of a little time.*"—Had not my case been recorded seven years ago, at a time I little expected to meet with such an accident, much less to find any account of what seemed to me such a *rara avis* in any old work on farriery, so remarkable are the coincidences between my account and Solleysel's, that one might be led to think I had perused his before I wrote my own.

A SINGULAR CERTIFICATE OF UNSOUNDNESS.

To the Editor of "The Veterinarian."

Dear Sir,—I AM induced to trouble you under the following circumstances:—On the 18th of this month I was requested to examine a chestnut mare, which I did, and pronounced her sound. On the 19th, it would appear that the purchaser wished to return her, and had her examined by another veterinary surgeon, who gave the enclosed certificate.

I shall, therefore, feel obliged if you will insert a copy of the certificate in your next Number, so as to obtain the opinions of the profession generally concerning it.

I beg to remain,
Your obedient servant,
JOHN F. SHAW, M.R.C.V.S.

Veterinary Infirmary,
Albion-street, Cheltenham,
April 29, 1850.

The Certificate.

I certify that I have this day examined a chestnut mare at the request of the Rev. ———; that I consider her generally sound; but that, *in my opinion*, a horse that requires to be shod in the peculiar way that she is behind, cannot, strictly speaking, be pronounced sound.

B.

Cheltenham, April 19, 1850.

THE CONTROVERSY OF THE EXPANSION OF THE HORSE'S FOOT.

By ARTHUR CHERRY, *M.R.C.V.S., London.*

To the Editor of "The Veterinarian."

Sir,—I HAVE read, in the last Number of your Journal, a letter signed "J. Hely, 11th Hussars:" I have seen this effusion with regret, and with very considerable surprise; and, as I am alluded to, I must claim the right of a reply, but I shall do so very shortly.

What "J. Hely, 11th Hussars," has to do with an argument on a topic belonging alone to the science of veterinary physiology, I know not, nor can I understand. The *Army List* tells us that Mr. J. Hely is a Lieutenant* and Paymaster in the 11th Regiment of Hussars. What these appointments have to do with the contraction or non-contraction of the horse's foot, is entirely beyond my comprehension, as are also the grounds on which he presumes to give a judgment: but this I can comprehend, that he has written a letter containing a large amount of personal abuse, and a very small amount of argument: the first is too contemptible for further notice; and the second, emanating as it does from one not belonging to the veterinary profession, is placed without the pale of reply. I will render unto Cæsar the things that are Cæsar's; but, as this does not belong to such a rule, I have nothing to do with it.

To this letter is appended a note, to comprehend which has been the work of some hours of reflection. A grave accusation is brought against me. I deny the justice of such a charge. The attack—if attack it can be called—was provoked, wantonly provoked, by Mr. Gloag and his partizans endeavouring to force experiments and opinions, conceived without judgment and conducted without skill, on to the profession, in a manner which I felt, as one of the body, was of the most audacious character. With this feeling I replied by argument to Mr. Gloag: no reply. I again try with sarcasm and irony to induce a reply, but still without any rejoinder from the original author: but up starts one, who, having no pretensions to enter into such a subject, impudently presumes to settle the question by a blow; thus making the subject a mere question of *clique*, a state of things which has no sort of connexion with the science of physiology. I admit that I am severe on Mr. Gloag, but not "unprovoked" or "undeserved." I did not think

* Paymasters of Regiments rank as Captains.—ED. VET.

so meanly of Mr. Gloag as to suppose that he was the author of "Shoeing Smiths;" but I meant to imply that there was a connexion, and I think so still: however, let that pass.

Before any of my letters have appeared in THE VETERINARIAN, they were submitted to several calmer, older, and wiser heads than my own,—men whose integrity and professional knowledge I hold in the highest esteem; and when such men did not see occasion to find fault on the score of their being "unprovoked" or "undeserved," I do not think that I have much to fear in leaving the matter in the hands of the profession.

I shall now conclude, and take this, as being the last, opportunity of thanking the readers of THE VETERINARIAN for the patience with which they have borne with me during the last five years of my not unfrequent appearance; but when such letters as those by "Shoeing Smiths," and by "J. Hely, 11th Hussars," and such a note appended, I can only say, in your own words, that it is as "undeserved" as it is "unprovoked."

I know well that there are many who can do more for science than myself, but no one can feel more earnestly or have a greater desire for the advancement of my art. As long as I am in it I shall pursue the same object, though probably not again in print; at all events, not through the channel I have hitherto made use of: for when those who cannot subscribe to babbling dogma or bow down their heads to Baal are to be insulted with mean-spirited scurrility and low personal abuse in the place of argumentative proof, when such is called for and justly due, it is time to say farewell.

May 3, 1850.

SPAVIN OR NOT? ANOTHER OPINION.

To the Editor of "The Veterinarian."

Sir,—I AM strongly inclined to think that the lameness of Amylum's pony is caused by his striking his fetlock with his other foot, thereby occasioning inflammation of the metacarpal nerve in its passage over the joint: he may do this, and yet leave *no external mark*, as I have found in very many instances.

I should therefore recommend him to blister the inside of the fetlock, give a little rest, and afterwards ride him with a boot, such an one as will act as a cushion to ward off the blow.

J. F. L.

TENOTOMY.

By W. Cooper, *M.R.C.V.S., Berkhampstead.*

Sir,—Your account of Tenotomy in the last Number of The Veterinarian is extremely interesting. But my experience in that operation has convinced me that there is another cause (to which you have not adverted) frequently producing that deformity of limb, which may also prevent the operator from bringing the limb into its normal position after having divided both the perforatus and perforans tendons. I admit that the cause to which I allude is sometimes the effect only; still I feel assured that it is frequently the sole and primary seat of the affection, the tendons and the muscles becoming only secondarily involved. In illustration of these views I will relate a case in point.

A draught mare received the common accident of sprain just below the knee, followed by enlargement of the part, the seat of which is frequently in that accessory ligamentous slip, by some called the *metacarpal ligament*, situated between the flexor tendons and suspensory ligament. The case was neglected, and the mare kept at work for several months, until the leg became so crooked that she was quite incapacitated for any kind of labour. In this state she was sold for a trifling sum to Mr. Collier, of Chivery, near Wendover, and I operated upon her *above* the point where this ligamentous band is inserted into the tendon: such procedure giving me, in this instance, an opportunity of knowing the real seat of the affection. Having divided both tendons, I found the limb was still as rigid as before; and finding no other cause to account for such anomaly, I examined the metacarpal ligament, which I found considerably thickened. This I determined to divide; and the effect was, that the limb directly came into its proper position without any force at all being applied. The animal being released, and the direction of the limb attended to by the usual means, she was put to work at the proper time, and has continued to do well up to the present period, being nearly two years since she was operated upon.

I am quite aware that I should have succeeded in bringing the limb into its normal position had I divided the tendon *below* the insertion of the metacarpal ligament; still, in cases where this ligament is the primary seat, I think a division of it alone, if resorted to in time, might suffice, without going to such an extreme as that of carrying the incision through the tendons.

I send this case simply to direct attention to the subject, and not with the remotest thought of dictating. My personal knowledge

of you, however, assures me that such an idea will not be entertained. I, therefore, make no further apology, but subscribe myself,

Your's most respectfully.

*** We are much obliged to Mr. Cooper for reminding us of this acknowledged omission. His suggestion, for confining the section to the metacarpal ligament in the operation of tenotomy is to us new, and in our opinion is one well deserving attention.—Ed. Vet.

SIXTH ANNUAL MEETING OF THE ROYAL COLLEGE OF VETERINARY SURGEONS.

The Sixth Annual Meeting of the Royal College of Veterinary Surgeons was held on Monday, the 6th of May, at the Freemasons' Tavern, Great Queen-street, Lincoln's Inn-fields, and was, on this occasion, unattended by the noise and confusion which have characterized most of the previous meetings. The attendance of members was numerous, between sixty and seventy.

The proceedings of the day were commenced by Mr. Gabriel, the Secretary, communicating to the meeting, that Mr. Thomas Turner, the respected President of the College, was, he regretted to state, unable to be present on that occasion by reason of indisposition; and he therefore begged to propose that Mr. William Robinson be called to the chair.

The motion, having been seconded, was carried unanimously.

Mr. Robinson, on taking the chair, expressed his deep regret that the severe illness of Mr. Turner should have been the cause of his absence on that occasion, in which feeling he was quite sure all the members present must most fully concur [*hear, hear*]. He thanked the Meeting for the honourable position in which they had been pleased to place him; and he begged to assure them that he would perform the duties of the office to the utmost of his abilities. He believed his first duty was to call upon Mr. Gabriel, the Secretary, to read the minutes of the last meeting.

Mr. Gabriel then read the minutes, which were confirmed, and signed by the Chairman.

The Chairman said, his next duty was to call upon the members present to proceed to the election of six persons as members of the Council, in room of the six gentlemen retiring by rotation, who were, however, eligible to be re-elected, or any of them, should it be the will of the Meeting. He was sure he need not point out to the members present the great importance of not appointing any but gentlemen fully competent to assist in the proper preparation

and education of those placed under their charge, by which means alone could the College go on prosperously.

Professor C. Spooner said, it appeared to him, from the report of the last meeting that he had read, that at the last Annual Meeting several members had voted for individuals who were already members of the Council, but not among those retiring. Now, he saw that on the balloting list for the present election of members of Council, amongst those names put forth was that of one member of Council, and he considered that those only who had asterisks put to their names ought to be voted for, and those who had not, ought not to be voted for. That course, he thought, would prevent the names of persons not eligible from going before the public with only three votes attached, as his name had in the Report of the last Annual Meeting.

Mr. A. Cherry said he was very much obliged to Professor Spooner for bringing the subject forward. The practice had led to a deal of confusion.

Professor Spooner would propose that the names of all those individuals now on the Council be left out of the balloting list. He thought that would be the best course to adopt: it would prevent any unpleasant or invidious remarks, as had been the case already.

A member thought the names of the members of Council had better remain in the list, as they were before.

Another member supported Professor Spooner's opinion, and would second his proposition. He considered it was not right that their names should appear with only two or three votes attached in the reports, as had occurred in the instance of Professor Spooner, and be circulated all over the country.

Some further discussion took place on the subject, but the motion was not ultimately put.

Mr. McKenna and *Mr. Smith Mayer* were then proposed and appointed as Scrutators, and the balloting was proceeded with, which, with the casting up the votes, occupied nearly an hour.

The Chairman then said, the Scrutators have just placed in my hands the list of votes they have made up, and the names of the six Members of Council elected, which I will now read to you. Their names are as follow :—Professor C. Spooner, 59; Professor Simonds, 52; J. Wilkinson, 50; F. King, 48; Professor Morton, 37; F. C. Cherry, 21.

Having given you the names of the Members of Council elected, and the numbers of votes, I do not think it at all my duty to read the names of those persons who may have one or two or larger numbers of votes attached thereto, and I consider that in not doing so I shall best prevent much irregularity which has this day been complained of.

Mr. Vines, however, at some length maintained his right to know how many votes had been registered to his name, and those of all the other persons proposed.

Other Members expressing similar views, after some discussion

The Chairman put the question to the vote, and decided on the show of hands in favour of those opposed to the reading of the other names.

That decision was, however, declared to be inaccurate, and after some further discussion

The Chairman consented to again submit the question to a show of hands, when there was a decided majority for the reading of the names and votes, with which the Chairman complied.

Professor Spooner then said, that, in order that he might not be misunderstood, he begged to say that he had not proposed that the other names and votes should not be read.

The Chairman said it was now his duty to tell the gentlemen present that the business of this meeting was, by the election of six Members on the Council, at an end; and that immediately afterwards a Special Meeting was to be opened for receiving the Report of the Council for the past year, which he called on Mr. Gabriel to read to the meeting.

Mr. Gabriel read the Report, and at its conclusion it was moved and seconded, that the Report be received and adopted, and be entered on the minutes, which being adopted, the Meeting adjourned.

The following is a Copy of the Report:—

"ROYAL COLLEGE OF VETERINARY SURGEONS.

"In the Sixth Annual Report of the Council of the Royal College of Veterinary Surgeons, the most important subjects for consideration are the Code of By-Laws and the Financial Report.

"The first and most important of these—the By-Laws of the College—has been continuously under the mature and deliberate consideration of the Council. Early in the year a Committee was elected to prepare a draft of the Code to be proposed for adoption: this draft was printed and circulated among the Members of the Council, and, after a sufficient lapse of time, several meetings were held, at which the proposed Code was closely investigated, revised, and corrected. It was most anxiously desired by the Council, that every regulation should be introduced likely to secure the better education and preparation of the candidate for your Diploma; but as, though the desirability of these regulations were universally admitted, some doubts were raised as to how far the College, in accordance with the provisions of the Charter, had the power of enforcing them, it was resolved, in order to ascertain

this point in the most satisfactory manner, that your Solicitor should be instructed to obtain the opinions of three eminent barristers at law on the legality of the Code of By-Laws prepared by the Council. Sir John Jervis, Sir Frederick Thessiger, and Mr. Jago, were the authorities selected for this purpose; and your Council had hoped to have been enabled to lay the result of their consultations before the present Meeting; but the "law's delay" has prevented their doing so, and they can only engage, that no time will be lost, on their part, in acting on the opinions obtained.

"The second subject for your consideration is, the state of your finances; and your Council have the most sincere satisfaction in being able to congratulate you on being out of debt, and not out of debt only, but with a very respectable balance in your bankers' hands. A loan of £800 has this year been finally liquidated, and the general expenses incurred in obtaining and carrying out the Charter up to the present time have amounted to £2858..1*s*..1*d*. —a serious responsibility to have been incurred without any apparently available funds to meet it, and no inconsiderable amount to have been paid in so short a period by the body Corporate; and it is a source of no small gratification to your Council to be enabled to add, that this has been done without the aid of any extraneous assistance whatever, but solely from the legitimate source of income of the College and the contributions of its individual Members.

"During the past year Forty-seven Candidates have received the Diploma of the College, and their names have been duly announced in the public papers, in the same manner as those of the gentlemen who have been admitted members of the Royal College of Surgeons. The number of Members admitted into the body Corporate since the obtainment of the Charter is 320.

"Four deaths only have been communicated to your Registrar this year: among them will be found one of your Vice-Presidents, Mr. Read, of Crediton; and also a very old and highly respectable member of the profession, Mr. Burley, of Leicester.

"Among other Members to whom the College is indebted for much and valuable assistance is Mr. Thomas Walton Mayer, who has most liberally this year presented the sum of £37..14*s*..7*d*. to the College, as a contribution to a fund for procuring a residence or place of meeting; and the funds of the College being in a comparatively flourishing state, a balance of £212..5*s*..7*d*. remaining in hand after the repayment of the loan and the current expenses of year to the 1st of April last, the Council have directed the necessary inquiries to be made on the subject.

"E. N. GABRIEL, *Secretary*."

"May 1, 1850."

WILLIAM FIELD, *Treasurer, in Account with the Council of the Royal College of Veterinary Surgeons, from April, 1849, to 27th March, 1850.*

Dr.

	£	s.	d.
To Balance in hand on 13th April, 1849	135	7	6
,, Amount of Annual Subscriptions	21	0	0
,, Examination and Admission Fees.....	412	13	0
,, Amount received of Registrar by sale of 16 Lists	1	4	0
	570	4	6
,, Amount received of T. Walton Mayer, Esq., being his Donation towards a Building Fund	37	14	7
	£607	19	1

Cr.

	£	s.	d.	£	s.	d.
By Fees to Board of Examiners				98	0	0
,, Expenses at Edinburgh.....				1	12	6
,, Amount paid Wm. Field, being his share of £100 in full payment of Loan ...	36	4	8			
,, Interest on same from 1st Oct. 1848 to 27th July, 1849	1	9	11			
				37	14	7
,, E. N. Gabriel, as above.....				37	14	7
,, J. & T. Turner, as above				37	14	7
,, T. W. Mayer, as above				37	14	7
,, F. King, as above				37	14	7
,, Amount paid Mr. Henderson, being his share of £50 in full payment of Loan	18	2	3			
,, Interest on same from 1st Oct. 1848 to 27th July, 1849.....	0	14	10			
				18	17	1
,, Allowance to Secretary.....				50	0	0
,, Advertisement and Printing Accounts				19	18	10
,, Amount paid Registrar for Stationery, Postages, &c.				4	6	2
,, Rooms for General Meetings, Councils, and Committees				14	6	0
,, Balance in hand				212	5	7
				£607	19	1

W. FIELD, *Treasurer.*

April 2d, 1850. Examined and found correct, E. BRABY, WM. ERNES } Auditors.

REVIEW.

Quid sit pulchrum, quid turpe, quid utile, quid non.—Hor.

Plomley's Improved Horse-Shoe.

The shoe Mr. Plomley (of Maidstone) has sent us for examination and trial, though it has some novel features about it, is evidently not what anybody would venture to designate a *new* production. Indeed, in the advanced state of the art of farriery in this the nineteenth century, he would be a clever fellow who could devise something in the shape of a horseshoe different from the multitudinous kinds and varieties of shoes that have come, either as realities or upon paper, at one time or another under our notice. We have but to turn over the pages of Lafosse, Solleysel, and one or two other writers on farriery, to feel persuaded that almost, if not quite, all the changes of figure and shape of which the piece of iron to be converted into a horseshoe admits of being fashioned into, have been rung, and some of them over and over again; and therefore, we repeat, it is any thing but an easy task to set about framing what strictly and veritably deserves the appellation of a *new* horseshoe.

Mr. Plomley, fully conscious that his shoe possesses no such pretensions, has simply named it his "Improved Horse-shoe." And improved it certainly is in one important part;—an improvement that will not fail to strike the attention of any veterinarian or farrier, assuredly the moment the shoe is presented to him upon the foot, if not while he holds the shoe in his hand. As will be seen by the wood engraving (stitched into our present Number), it is a broad-web shoe, made to give "plenty of cover" to the sole of the foot, and so far differs nothing from such shoes as we are in the habit of putting upon flat and spraw or tender feet. But it is more than this. Its heels *(a, b—c, d)*, instead of terminating in the ordinary manner, are carried round towards the frog, and are so cut that they slant in lines parallel with the side of the frog; between the heels of which body and those of the shoe no more than a "finger's breadth" of space is directed (in the prospectus) to be left: so that if the interspace between the heels of the shoe be

measured, in a line running directly across from one heel to the other *(o, o)*, not above a couple of inches is found left for the projection of the base or bulbous portion of the frog. Upon the bearing places of the hoof, formed by the inflections of the heels of the crust, the heels of the shoe come to points *(b, d)*, and so correspond in shape to the heels of the crust. These peculiarities may, at first sight, appear as matters of taste or fancy. No such thing, however, seems to have entered the maker's head. He has evidently done all this with design. His object has been to "afford protection to the posterior parts of the foot:" and this, with very many horses, constructed as our roads in the country at present are, is both an innovation and an improvement on the ordinary broad-web horseshoe.

So far Mr. Plomley has brought before us a shoe of which, from the three months' trial we have already had of it on some half-a-dozen horses—including those we ride and drive ourselves—we can speak very favourably. It has in our eye some strong recommendations to public notice; and we only wish, for the improver's sake, that he had not, in his prospectus setting forth its "advantages," &c., put down to the credit side of its account more than it will or can, in our opinion, ever be found to respond to. It is, as we think, a great mistake to bepraise any man or thing over much: experience will be sure to find such fulsome adulation out in the long run; and then the *vox populi* will be apt to detract from him or it even that small amount of merit which either really may or does possess. However, we cannot act otherwise than take the prospectus as it comes before us; and therefore we must needs set forth, *verbatim et literatim*, Mr. Plomley's account in his own words of "the advantages of the improved horseshoe."

1st. "It affords greater protection to the foot, especially at the posterior part."

2dly. "It enables the horse to use all the powers of his foot, and travel with ease."

3dly. "It prevents the chipping out of the horny exfoliating sole."

4thly. "It prevents bruises and the picking up of stones, when properly applied."

5thly. "It lessens the concussion, by its greater breadth of surface."

6thly. "It wears longer, and does not require removing."

7thly. "It is equally well adapted for hunting."

Taking these laudatory statements into our consideration in the order in which they are presented to us—

With No. 1, as has been signified by us before in this article, we are quite of accord.

But with No. 2, asserting that it (the shoe) "enables the horse to use all the *powers* of his foot, and travel with ease," we have a great deal of fault to find, either as ambiguously expressed, or as a statement incompatible with our physiological knowledge of the foot. The foot possesses no *active* or self-moving "powers." All the "powers" it has, consist in its properties of elasticity and (which has of late been doubted) expansion; and to the action of these Mr. Plomley's shoe, so far from contributing, is on the contrary, from the nailing it requires, unfavourable. And as for a horse being able to "travel with ease" with it, such an assertion naturally leads a person to infer that all other shoes are apt to give horses uneasiness,—an inference or inuendo contradictory to the commonest experience.

No. 3. Supposing that the sole of the hoof, instead of being pared away with a drawing-knife in the ordinary manner, is left to exfoliate of itself, a broad covering of shoe cannot fail to have the effect of "preventing the chipping out of the horny exfoliating sole;" and since we, for our own part, have of late, prompted by past experience, been growing less and less fond of the drawing-knife, we regard this as by no means a trifling advantage. If the broad-web shoe of itself is advantageous as a protector to the foot against stones and other hard bodies, by leaving the old sole in, to separate and come away of its own accord, and (through the broad shoe) by retaining it during exfoliation, it must afford additional and more effectual protection.

But along with this comes another and more consequential advantage to the foot,—one overlooked by Mr. Plomley, and only discovered to ourselves by dint of practice and observation;—this is, the humid and elastic condition in which the live sole is through such means constantly kept, in consequence of its natural exuding moisture being stayed by them from evaporation. The retention of wet, dirt, and stopping, by the broad web may have some effect

in producing this, but it is mainly brought about in the manner we have stated. And in proof that such is the fact, if Mr. Plomley or anybody else will notice the condition of a foot that has been shod as he recommends for a month or so, he will find precisely what we have stated: this fact Mr. Plomley, no doubt, has remarked, and only from oversight has neglected to make mention of it. The farrier who comes to pare such a sole will tell us that "it cuts like a piece of new cheese." This tends to make us, in feet shod after this manner, very indifferent about stopping: indeed, our belief is, that such feet require no stopping; they being always kept, as it appears to us, moist enough without.

No. 4 respects "the picking up of stones." Now, here, we cannot help thinking but that Mr. Plomley has caught himself in his own trap. We say this more in pun than in ill-nature; still, we think we can demonstrate that we say it not without reason. For a horse's hoof to become what is called "a stone-trap," it appears to us we cannot do better than shoe it with the ordinary "seated" shoe, which is bevelled upon its foot-surface and made flat upon its ground-surface. Nothing can be better adapted for entrapping and holding stones than the concavity of the shoe opposed to the concavity of the sole of the foot. Mr. Plomley, it is true, diminishes this liability to entrap by diminishing, by his broad web, the entrance into the trap, so that only a small instead of a large stone can find admittance. But, why not annihilate the trap by reversing the shoe, and so making the foot-surface the ground-surface of it, as in fact he has done in his "hunting shoe?"

No. 5. Does a broad-web shoe "lessen concussion?" The greater the thickness or body of iron (in the shoe) between the concussing and the concussed body, the less, no doubt, the effect of one upon the other; on the principle of the little shake or jar a man lying upon his back with an anvil placed upon his breast feels whenever the anvil is struck, even though it be with a sledge hammer, by another man. But, then, the heavy shoe calls for stout nailing, and nailing all round, to keep it on, and stout and extensive nailing is said to do harm by "fettering" the foot, through counteracting its properties of yielding to the superincumbent weight, and thereby preventing expansion. Recently as

the great question of *expansion of the foot* has been agitated by some of the leading men in our profession, we feel unwilling here to prosecute this part of our subject: we shall therefore pass on to

No. 6, stating that the shoe before us "wears longer," and, as a necessary consequence, we take it, "does not (so often) require removing." This will depend, of course, on the substance and hardness of the shoe. The objection to so thick a shoe as the large one Mr. Plomley has sent us, is its *weight*. We are of opinion, however, that a shoe, preserving the same breadth, might be made of thinner and harder or closer iron, without materially detracting from its durability.

No. 7 informs us—"It (the shoe) is equally well adapted for hunting." We believe that any shoe that is proved well suited for general road riding is speedily "adapted for hunting" by being cut as short as possible at the heels, and nailed on with more than ordinary care; or, on the other hand, that any shoe that is good for hunting is equally fitted for other purposes. And we must say that the one Mr. Plomley has sent us as his "shoe for hunting," is to our mind the very best shoe of the lot for every foot it can be nailed upon, and there are but few that will not admit of the application of a shoe of the sort. What makes us so warm in our praise, and at the same time so confident in our tone of speaking, of this shoe is, that for many years *the concave shoe*, as it is called, has been in ordinary use in our forge, and certainly has, from year to year, increased in favour. Nor do we here stand alone in our good opinion of it. Other forges there are—military most of them, we believe—which adopt, with the best of effects, the same principle of shoeing.

Having completed our analysis of Mr. Plomley's shoe, together with that of its alleged "advantages," we may bring this notice to a conclusion; but this we certainly shall not permit ourselves to do without expressing our opinion of his "Improved Horseshoe," as, from the trials we have already made and are still making of it, of a highly favourable complexion. We are not of that class who pronounce opinions of horseshoes as of books, "off-hand." No person can say for certain what a horseshoe is, or is likely to turn out to be, until he has seen it in use. We have now had three months' experience, though that we admit we have limited to a

few horses, of Mr. Plomley's shoe, and we have spoken of it accordingly; we hope to have three or twice three months' more trial of it, and on a more extended scale, which will enable us to speak of it, as a shoe for *general* purposes, in more definite language. For tender, flat, weak, and spraw feet, there cannot be a doubt of its adaption and serviceability.

Home Extracts.

The Present State of the Medical Profession in the United Kingdom.

There are no people on the face of the earth who know so little about the qualifications of their medical attendants as the subjects of Her Britannic Majesty. Talk to John Bull about food and commerce, and you excite his interest and attention; ask him about Blair's Pills and Holloway's Ointment, he has heard of them, and perhaps tried them both; mention legitimate medicine to him, and he is fairly at his wits' end: he knows not the difference between a physician, surgeon, and general practitioner, and this ignorance extends to almost every rank of society. The following extract from the *Morning Herald,* during the late epidemic, is a good example. The writer, after trying very properly to soothe the public anxiety, says--

"The patient can have a Bright, Paris, Latham, Southey, Elliotson, Seymour, Marshall Hall, and Prout; that he can have the aid of Brodie, of Hammick, of Guthrie, of Stanley, of Keate, and of numerous others as able though not so celebrated as physicians, surgeons, and general practitioners."

As a vast number of the members of our profession are ignorant of its present condition, we purpose, first, to endeavour to enlighten them upon this subject, and then to suggest a practical remedy for the incongruous and chaotic state of things that now exists. It must be apparent to all, that it is the duty of a good government to provide an efficient class of medical practitioners for the people; it must also be clear to the meanest capacity, that, if an examination is necessary at all, it ought to include both medicine and surgery; that these two sciences are one, and indivisible; that a disease so called "surgical" to-day may be "medical" to-morrow; that the knife in many cases should only be resorted to when internal treatment has failed; and that a surgeon should be well acquainted with the condition of the heart, arteries, lungs, kidneys, and other viscera, before he subjects his patient to a dangerous

operation. Of two of the Examining Boards of England—the College of Surgeons and Physicians—one sends forth sawyers, plasterers, and joiners, for the outside of the building; and the workmen from the other shop are to attend to the repair of the inner apartments. Now it so happens that the plasterers and joiners out of their own workshops (the hospitals) undertake all repairs, though not free of the craft. The inside workmen, on the other hand, are too often puzzled with holes and rents in the outer walls, which they are unable to mend. But the living house differs so materially from the house we live in, that one breach or flaw affects the whole habitation, and there is such a sympathy between all the apartments, that one cannot be materially out of repair without deranging the rest; and hence the necessity of compelling the workman to learn all the arts, and then follow that which his taste or his circumstances may make most desirable. To a medical man the above comparison may appear superfluous, but as this article may be read by some unprofessional persons, who take an interest in medical reform, we are anxious to make the subject intelligible to all. The following account of these diploma shops, and the price of parchment at each, will place the matter in a clearer light before the reader, who must also understand, that these bodies all require different curricula, and many of them have jurisdiction over certain localities. Thus, a circle of seven miles is drawn around London; and provincial physicians are not allowed to practise within this circle, unless they undergo another examination at the College of Physicians, and this monstrous absurdity was defended before the Parliamentary Committee by the President of the College, Dr. Paris, on the ground "that a higher order of physicians should be secured for the metropolis" The greater number of these establishments have thought only of their own narrow circles and petty interests, and, like the cobbler in the fable, "Nothing like our parchment" has been their cry. Some of their acts have equalled those of eastern despots; thus the members of the College of Surgeons, who passed the same examination as the councillors, were compelled to enter their own College at the *back* door, and about twenty self-elected individuals assumed the right of dictating to the 10,000 members whose remonstrances they treated with scorn and contempt. Many of these men have not only been well remunerated as examiners, but they have put money into their pockets by compelling students to pay for certain lectures which they delivered, and also for attending hospitals to which they were physicians or surgeons.

And now for the establishments that exist in the United Kingdom for granting diplomas in medicine and surgery. We have obtained the following information from various sources.

ENGLAND.—The Archbishop of Canterbury, the fee not known. Universities: Oxford, M.B. £23, M.D. £40; Cambridge, M.B. £11..6*s.*, M.D. £11..12*s.*; London, M.B. and matriculation examination, £10, M.D. £10; College of Physicians, license, £56..17*s.* including £15 stamp. Fellowship by "scratching," ballot, and recommendation of the President, £51..1*s.*, including £25 stamp; extra licence for rural physicians out of the prescribed circle, £24..18*s.*; College of Surgeons, £21 for the membership; and an additional £10 for the fellowship; Apothecaries' Company, London, and within ten miles, £10..10*s.*; other parts of England and Wales, £6..6*s.*; an assistant's certificate, £2..2*s.*

IRELAND.—University of Dublin, M.B. £11..15*s.*, stamp £6; M.D. (no examination) £22, stamp £6; if the *parchment* be obtained, £10 extra must be paid for the M.B. and M.D., and this is called the testimonial. An extra charge of £5 is also made for the elective franchise for a Member of Parliament for the University of Dublin. College of Physicians, licence £30; fellowship by ballot £45, including stamp £25. College of Surgeons (examinations public), licentiates pay £10..10*s.*, and registered pupils, £26..5*s.*, provided they intend to reside ten miles from Dublin. Fellowship: licentiates £21, registered pupils £36..15*s.*, provided they intend to reside in Dublin, or within ten miles. Apothecaries' Company, 16*s* Queen's Colleges, recently established, viz. Cork, Belfast, and Galway: matriculation examination, £3; for the degree of M.D., exclusive of stamp, £5. The Queen's University in Ireland, M.D. £5. A diploma or certificate of attendance is also given at the Dublin Lying-in Institution, but no examination is required.

SCOTLAND.—Universities: Edinburgh, M.D. £25; St. Andrews, M.D. £25..3*s.*; Glasgow, M.D. £25; Aberdeen, M.D., King's College, £26..5*s.*..6*d.*; Marischal College, £10..10*s.* College of Physicians, Edinburgh; those belonging to this College are called Fellows, and are elected by ballot, a majority of three-fourths being necessary for the election of the candidate. Only graduates of foreign universities are required to undergo an examination, and this law is not always observed. Fee for a resident fellow, £130, for a non-resident, £80. Faculty of Physicians and Surgeons, Glasgow, fee, £7..7*s.* College of Surgeons, Edinburgh, Fellowship, entrance money, £250; apprentices of Fellows, £100; Member's fee, £7..5*s.*; apprentices of Fellows, £1..5*s.*; other apprentices, £2..16*s.*..6*d.* For an assistant Surgeon's diploma for the navy (without previous qualification), £4..19*s.*..6*d.* For those who have certificates, £3..18*s.*..6*d.*, and those having the diploma of the College pay £2..17*s.*..6*d.* Glasgow: the degree of Magister Chirurgiæ, £10..10*s.* The privileges of the College of Physicians are

confined to the old town of Edinburgh. The Faculty of Physicians and Surgeons of Glasgow has jurisdiction over four counties; the College of Surgeons of Edinburgh over eight; and nearly one-half of the population of Scotland is not under corporate control. It should also be known that a Scotch diploma does not qualify a man to practise in England or Ireland, and vice versâ.

Let the reader now pause, and ask himself whether he is living in the nineteenth century, and whether the dark age has really passed? What would he think if some of the clergy were licensed to preach only in certain districts, and if barristers and attorneys were compelled to pursue their avocations within chalked lines? What would he think of metropolitan and rural theology—of city law and country law? But let us contrast this state of things with that which exists in France, a country numbering a population of thirty-three millions. There, there are only three Faculties of Medicine that grant degrees, Paris, Montpellier, and Strasburg, and all candidates are, in addition to the degree of Bachelor of Letters, compelled to take one in Medicine and Surgery, and then practise as they please. The students obtain their posts at the hospitals by examination, and the hospital appointments are obtained by concours, or public competition, so that all drones are kept out of the hive. The examinations are not only open to the members of the profession, but to the public at large. In France there is uniformity of qualification, and the same title; but observe the diversity of titles and qualifications in this country. In our first number (March 1), we gave an analysis which we made of the London Medical Directory, and of the qualifications of the 2,567 metropolitan practitioners for 1849. We now give an analysis of the Provincial Directory, (which has cost us immense labour), and the reader will be able to draw his own inferences as to the necessity of a *sweeping* measure of medical reform. Let him, whatever his political opinions may be, banish from his mind the hacknied expression "vested rights." The man whose open drain or cesspool is scattering death around might as well use the same argument. But to whom do these rotten corporations belong?

Before giving the following analysis of the Provincial Medical Directory for the present year, we must beg the reader to keep in view the relative population of the three countries, England 15 millions, Ireland 8, and Scotland 2½ millions. Another important fact must be borne in mind, viz. that a man's proficiency must not be estimated by the number and quality of his titles, for as examinations are at present conducted, a gentleman with one diploma may be in many instances a better practitioner than others who have three or four. Of the 1408 without titles, many were in

practice before the year 1815; but the great majority, we believe, are so disgusted with medical affairs, that they have refused to give their qualifications; it is probable that a vast number (not including the host of illegal practitioners) are not mentioned in this Directory, and army and navy surgeons are not included. Some of our readers will think with us, that before the ministers introduced a medical bill, they should have obtained the qualifications of all the practitioners in the united kingdom; and this return might easily have been made, with very little expense, by the registrars of births, deaths, and marriages.

The Provincial Directory contains the names of 8,380 practitioners, and they are thus qualified. Degrees: Lambeth 4, not including Sir C. Clarke. Oxford 14, of these 12 are M. D. and 2 M. B. Cambridge 62; 44 of these M.D., 17 M.B., and 1 L.M. London 59; of these 25 M.D., 34 M.B. Dublin 24; of these M.D. 14, M.B. 9, L.K. and Q.C. 1. Edinburgh 535; and 211 of these possess no other qualification. St. Andrews 118; Glasgow 99; Aberdeen 64; Foreign degrees 103; London College of Surgeons and Apothecaries 3,698; College of Surgeons alone 1127; Apothecaries Company alone 787; London Hall, College and Edinburgh Surgeons 9; London Hall and Edinburgh Surgeons 60; London Hall College and Glasgow Surgeons 4; London Hall and College and Dublin Hall 4; London Hall and Glasgow Surgeons 10; London and Glasgow Surgeons 3; London and Edinburgh Surgeons 17; Edinburgh Surgeons alone 113; Dublin Surgeons alone 14; Glasgow Surgeons alone 32; London College of Physicians without any other named qualification 12; in practice before 1815, or diplomas not stated, 1408. The Irish diplomas amount to 42; the Scotch to 1064; the Foreign to 103; and 596 are practising with Irish, Scotch, or Foreign qualifications alone.

College of Physicians.—It is well to state that the licentiates and extra licentiates do not undergo the "*same examination*," and the extra licentiates used not to average more than three yearly; but when Sir James Graham's bill was proposed there was a rush made to the College of Physicians; the candidates had but one examination, and that not of a very searching character; inferior, we believe, to the examination of the Apothecaries' Company. Many of these extra licentiates are now in general practice and prepare their own medicines. We cannot state how much these gentlemen added to the empty coffers of the College. The 192 licentiates and extra licentiates are thus qualified in addition to the license. Oxford 5, all Fellows of the College; Cambridge 22, 15 of these Fellows; M.B. not stated, 1; Berlin 1; Leyden 1; Edinburgh 31; London College and Hall 42; St. Andrews and London Hall and College 5; Aberdeen and London Hall and

College 4; Philadelphia and the London Hall 2; Edinburgh M.D., and College of Surgeons 5; Erlangen and the London Hall 1; St. Andrews and the London Hall 1; Glasgow M.D. and College of Surgeons 2; Edinburgh M.D. and the London Hall 1; London College of Surgeons only, 19; Erlangen and the London College and Hall 1; Edinburgh Surgeons 2; Erlangen and College of Surgeons 1; Erlangen 1; Dublin 1; Apothecaries' Hall 3; Pisa and the London Hall and College 1; Paris and College of Surgeons 1; Edinburgh and the London Hall and College 4; St. Andrews and the London College of Surgeons 1; Lambeth 2; Dublin College of Surgeons 1; Gottingen and the London Hall and College 1; Bowdoin U. S. 1; Pennsylvania 1; Aberdeen M.D. 2; St. Andrews M.D. London Hall and Edinburgh Surgeon 1; Lugd. Batavia 2; one of these London Hall and College; Glasgow M.D. and the London Hall and College 2; St. Andrews M.D. 1; Glasgow, M.D. 1; Jena and our Hall and College 1; Edinburgh M.D. and the London College of Surgeons 3; Heidelburgh and London Hall and College 1; London, M.B 1; M.D. and London College of Surgeons 1; M.D. and London Hall 1; and 11 of the 192 have no named qualification. Of the above gentleman 92 are not privileged to put M.D. at the end of their names; 15 have foreign degrees, and 2 have been dubbed Drs. by the Archbishop of Canterbury; the remaining two who have been so honoured are fellows of the College of Surgeons.

College of Surgeons.—It will be seen that 1127 are practising with this diploma *alone* in the country, and 536 in London. Of the Honorary Fellows and Fellows by examination, the majority have not a medical diploma. What a monstrous absurdity! the very cause that *should have* insured their rejection induced the Council of the College of Surgeons, we suppose, to elect them Fellows! A member of this College when he becomes a Physician should pay £10 as a kind of purgation and absolution from surgical knowledge! This College does not require that its members should be able to write a common prescription.

Apothecaries' Company.—3698 are members of the London College of Surgeons also, and an additional 787 have the Apothecaries' diploma only; others are members of the College of Physicians, fellows of the College of Surgeons, and many have degrees from British and Foreign Universities.

University of Edinburgh 535.—Of these 211 have this degree *only*. 105 in addition have the diploma of the Edinburgh College of Surgeons. 31 are Fellows or Licentiates of the London College of Physicians. 85 are members of the London Hall and College, and 3 are Fellows of the Edinburgh College of Physicians. 64 London College of Surgeons. 9 London Hall, and 1 Dublin

College of Surgeons. 17 London Hall, and Edinburgh Surgeons. Of these 1 B.A. Dublin, and 1 Dublin Surgeon. 4 College of Surgeons London and Edinburgh. 2 London Hall and London and Edinburgh Surgeons. 1 Edinburgh and Glasgow College of Surgeons. 3 Glasgow College of Surgeons, or Faculty. 2 London Hall, and Edinburgh and Glasgow College of Surgeons. 1 Edinburgh and Dublin College of Surgeons. 9 others are Fellows or Licentiates of the London College of Physicians.

University of St. Andrew 118.—64 of these in addition to the degree of M.D. are members of the London Hall and College, and 1 of these B.A. Dublin. 25 London College of Surgeons, 2 of these Fellows of the College of Physicians, Edinburgh. 11 London Hall, and one of these B.A. Dublin. 6 Edinburgh College of Surgeons, 9 have this degree only. 1 Fellow of Edinburgh College of Physicians, 1 Licentiate of the London College of Physicians, and 1 B.A. Dublin. Of the above, 9 are Licentiates of the College of Physicians. What a refutation of the Parliamentary Evidence given by Messrs. Lawrence, Brodie and Guthrie respecting this University!

University of Glasgow 99.—33 have this degree only. 3 of these M.A. and 1 M.C. Glasgow. 19 London Hall and College of Surgeons, and 1 Dublin Hall. 16 London College of Surgeons, 2 of these M.A. 7 Edinburgh Surgeons. 12 London Hall, 2 Dublin Surgeons, 10 Faculty of P. and S. Glasgow. 5 of the above are Licentiates of the London College of Physicians.

University of Aberdeen 64. 34 of these in addition are members of the London Hall and College, 12 London College of Surgeons, and one of these F.C.P.E. 6 London Hall. 2 College of Surgeons, Edinburgh and London Hall, 2. 10 have the M.D. degree only. 6 of the above are Licentiates of the London College of Physicians.

Foreign degrees 103. Erlangen 23. Giessen 19. Heidelburgh, 12. Leyden, 9. Paris, 5. Jena 5. Pisa, 4. Berlin 3. Gottingen, 2. Munich 2. Louvaine, 2. Lugd. Batavia, 2. Leipsic, New York, Padua, Malta, Cogenhagen, Canada, Holstein, Coimbra, Pennsylvania, Bowdoin, Rostock, Gromergen, Harford, Genoa, Philadelphia, each one. The reader must recollect that the unjust and exclusive corporations of England, have driven men to Scotland and to the Continent to procure degrees.

Now, let us suggest a remedy for this monstrous evil, which we venture to assert no man unconnected with the corporations dares *openly* defend.

1. That a Faculty of Medicine shall be formed in England, Ireland and Scotland, and that each Faculty shall be composed of all the legally qualified

practitioners who belong to the Universities, College or Halls of the respective countries.

2. That all who enter the medical profession shall, *after five years*, undergo a preliminary examination in mathematics, and the English, Greek and Latin languages. The examiners to be appointed by government, and not members of the medical profession.

3. That the Medical Senate, or Examining Board, shall be at once formed of eighteen members, who shall be elected in the following manner. The six examiners in the practice of Medicine, Pathology, and Medical Jurisprudence, by the fellows, members, licentiates, and extra licentiates of the College of Physicians, and all the graduates of British Universities who *practise as physicians*. The examiners in Anatomy, Physiology and Surgery, by the members of the College of Surgeons of London, and the graduates of the University of London. Six examiners in Chemistry, Materia Medica, Botany, Midwifery and Diseases of women and children, by the graduates of the University of London, the members of the Apothecaries' Company, and all in practice before 1815, who register as general practitioners, excepting those who keep shops and openly trade in drugs.

4. That the examiners shall not be teachers, and shall receive a fixed salary.

5. That every candidate for the diploma of the Faculty shall undergo four examinations, and that there shall be an interval of six months between each. The first examination in Anatomy and Physiology; 2d. Chemistry, Materia Medica, Midwifery, Diseases of Women and Children, and Botany; 3d. Practice of Medicine, Pathology, and Medical Jurisprudence; 4th. Surgery.

6. That no candidate shall be allowed to present himself for the first of these examinations until he is twenty years of age, and has undergone such preliminary examination and course of study as the said Faculty shall direct.

7. That the verbal examinations shall be open to every legally qualified practitioner.

8. That all persons examined and admitted members of the said Faculty, shall receive the title of Doctor of Medicine and Surgery.

9. That the six examiners appointed by government for the preliminary examination, and the eighteen last mentioned examiners, shall constitute the Senate of the London Faculty of Medicine.

10. That the Faculties of Ireland and Scotland shall be elected as before mentioned, and that all members of these Faculties shall be privileged to practise in any part of Her Majesty's dominions.

11. That the said medical Senate shall regulate all matters relating to the price of the diploma, the charge for attendance upon lectures and hospital practice, subject, however, to the control of government.

12. That the Senate shall be empowered by law to enforce a general registration of all legally qualified practitioners, and to prosecute all those who practise illegally.

The above is only an outline of the plan which we believe could be easily carried out. Many modifications and improvements may be effected, but let the *representative system* be once established, and the matters of detail are of little importance. Some would prefer the election of a general council, who should choose the examiners; but this, we think, would make the matter more complicated and expensive, and might also give rise to favoritism. It is important to bear in mind, that the Apothecaries' Company agreed to relinquish their present powers as an examining body, provided

their members had a proper share in the formation of the new Institute. According to the proposed plan, we think, they will be fairly represented. The Editor of the *Medical Gazette* has lately spoken of the "*scarcely known*" *examiners* of the Apothecaries' Company! Wilful ignorance this, we think! Let us now give the names of the present examiners for the licence of the College of Physicians, namely, Drs. Nairne, Southey, Barker, and Jeaffreson. We find no records of the talent and experience of these gentlemen worthy of note. But take three of these "*unknown examiners*" of the Hall, Messrs. Drewitt, Robinson, and Semple. Mr. Drewitt is the author of the best Surgeons' "Vade Mecum" we possess; Mr. Robinson obtained two Jacksonian prizes at the College of Surgeons; and we need only refer to Dr. Semple's numerous papers in *The Lancet* as evidence of his industry and talent. Mr. Hilton, at the late Guy's dinner, in speaking of the examination at the Hall, observed, "that he recollected that it used to be said by students that they did not care for the examination at the College; it was the Hall examination that was the difficult one." We find that, from January 1841 to December 1849, 2606 persons have been admitted members of the Apothecaries' Company; and, beginning with 1841, the following are the number of candidates admitted each year, 368, 328, 338, 313, 264, 230, 265, 246, 254. Let it not be supposed that we are desirous for the continuance of this Company; the *name* alone will condemn it: we are only anxious that the members should take their due share in the formation of the council or examining board of the Faculty.

London Medical Examiner, April 1850.

Plaints and Prospects of the Medical Profession.

Yesterday afternoon a deputation, consisting of medical gentlemen of the metropolis and the large towns in the united kingdom, waited upon Sir G. Grey at the Home-office, for the purpose of representing to him the necessity which existed for the grant of a Royal Charter for the incorporation of General Medical Practitioners into an independent college.

The deputation having been introduced,

Mr. Clifton stated that the object of the deputation was to obtain the assistance of the Government in promoting the incorporation of general medical practitioners—a measure in every respect desirable, as it was calculated to raise the character of the medical profession generally, and to render the education of general practitioners more complete. One of the largest meetings of the medical profession hitherto held had lately taken place at

the Hanover-square Rooms, gentlemen from all parts of the kingdom being present; and it was there clearly shewn that a very great majority of the 10,000 or 12,000 general practitioners were strongly in favour of a charter of incorporation. The general practitioner was frequently called upon to attend cases of no ordinary difficulty and importance, and in the country districts to perform important operations. Their knowledge in every branch of the medical science was constantly put in requisition, and it was not too much to ask that such a body—second to none in usefulness or the importance of its functions—should have accorded to it a *status* much higher than it had hitherto enjoyed. Under the present system the student was examined by the Society of Apothecaries and the Royal College of Surgeons before he could be qualified for general practice; but while he was nominally a member of both these corporations, he had, in reality, no influence in them—no power of control or voice in the general management. The present examination in anatomy and surgery might be most materially improved if this charter was granted, and, as in the case of the London University, the candidate or student would reach a much higher degree of proficiency than that at present required. It was admitted that the examination of the London University was the best in London.

The Lord Advocate, who was present with the Home Secretary, said the experiment of requiring a greater refinement of knowledge on the part of medical men had already been tried in France, but without the success which was anticipated. Men so elaborately educated would not find it worth their while to settle down as medical practitioners in small country towns and villages and remote places.

Mr. Clifton was confident that, with a much higher degree of education, the general medical practitioner would be found equally ready to perform the duties required of him as he was at present. The granting of such a charter would also be of great benefit to the poorer classes in the increased ability of their medical attendants. The higher classes could command first-rate skill, but it was not just to suppose that the poor should be obliged to put up with inferior attendance. [Sir G. Grey—"Clearly not."] The members of the College of Surgeons had been discontented with the constitution of that body since its first establishment, and the new charter proposed was far from meeting the views of the general medical body. Many clauses in that charter were ambiguous, if not injurious, in their tendency. While Sir J. Graham held office the general practitioners had waited upon him by deputation, and he had warmly seconded their views. At his instance a joint deputation of general practitioners and members of

the Society of Apothecaries was formed, with full authority on behalf of the National Association to accept such a charter as the Crown might be advised to grant, and, on behalf of the Society of Apothecaries, to relinquish their present privileges. The gentlemen selected at a meeting of 900 members of the Association succeeded in obtaining from the Government a bill, bearing date the 7th of May, 1845,—the only one in which the general practitioners were in any degree provided for. The bill was opposed by the Royal College of Surgeons, the principals of which, he must say, had always shewn a readiness to keep down the interests and *status* of the general practitioner as far as possible; and the bill was abandoned by the late Government in consequence of that opposition. They hoped that the Government would not consider that the fact of a medical man practising midwifery and pharmacy should exclude him from any privileges in the College of Surgeons. The proposed charter for the College of Surgeons was in every way calculated to injure the interests of the medical profession; and, as repeated conferences had been held and propositions made to the College with a view of a satisfactory adjustment of the rights of general practitioners, without success, it was hoped that the Government would grant the charter of incorporation, which would enable them to examine students for general practice. Not only would this step conduce materially to the advancement of medical science generally, but the public would be great gainers by it.

Dr. Webster, Mr. Probert, Mr. Bird, and Mr. Ancell, urged successively the inutility of the present system, its depressing effect upon the profession generally, and the various advantages which would follow the grant of a charter of incorporation. Many of the most eminent general practitioners, whose fame might be said to be European, had declared that they were but little indebted for their eminence to the examination of the Royal College of Surgeons. The experience of years had shewn them that the best course to be adopted was the one at present proposed; and there was no fear that the general practitioner would, when both his *status* and his information were increased, turn away from his present duties as not deserving of his attention.

Dr. Webster pressed Sir G. Grey to give some information as to the intention of the Government on this matter.

Sir G. Grey replied that, at present, he was unable to comply with that request.

The deputation then withdrew.

A second deputation of medical gentlemen, proposing a modification of the Charter of the College of Surgeons, waited upon the Home Secretary, as soon as the first had withdrawn.

The Times, May 3, 1850.

To the Right Honourable SIR GEORGE GREY, *Bart. Her Majesty's Principal Secretary of State for the Home Department.*

The Memorial of the Master Wardens and Society of the Art and Mystery of Apothearies of the City of London,

Sheweth,

That the Society of Apothecaries were entrusted by the Legislature in the year 1815 with the duty of regulating the course of study, and deciding upon the qualifications, of all who should thereafter propose to engage in that branch of medical practice.

That the Society do not hesitate to affirm, that they and their predecessors have discharged that duty, for a period of five and thirty years, zealously and faithfully, and, as they confidently believe, with advantage to the public.

That they have laboured incessantly to render the Medical Attendant of the great mass of the people of this country thoroughly competent to the discharge of the important duties which devolve upon him; and they have striven, to the extent of their powers, to elevate the professional and social status of the large body of practitioners who have been educated under their auspices.

That the Society have been long sensible of the necessity which exists for a revision of the laws affecting the Medical Profession generally; and they have omitted no fitting opportunity of representing to the Government the changes which are required in the Act of Parliament under which the functions of this Society are exercised.

That they have aided, to the best of their ability, the efforts which have been made of late years to render the Medical Institutions of this country better adapted for the discharge of their respective functions.

That, irrespectively of all personal considerations, and with a single desire to promote any arrangement which gave reasonable promise of an improvement in the medical polity of the country; and in the hope that an Incorporation of the General Practitioners in Medicine, Surgery, and Midwifery, possessing an unrestricted right of examination in every branch of professional knowledge, would result in such an improvement; and in the belief that such an Incorporation was, in fact, desired by a large proportion of the General Practitioners themselves, the Society consented to relinquish the performance of the duties in which they had been so long engaged.

That the conferences which took place between the Govern-

ment and the various Medical Authorities in the years 1845 and 1846, in which the Society lent their willing and active co-operation, having failed of effect, the Society were themselves the first to propose the Conference of the Medical Corporations, to which delegates from the National Association of General Practitioners were afterwards admitted, upon the suggestion of the Secretary of State; that, at the frequent meetings of the Conference thus constituted, the delegates from the Society of Apothecaries, in conjunction with the other members of the Conference, zealously laboured to effect such an arrangement as might prove generally acceptable to the Medical Profession, and might secure the sanction of the Government and the Legislature; and the Society have seen the unsuccessful termination of the labours of that Conference with unfeigned regret

That although the Society, under the circumstances which have been stated, consented to relinquish the duties which were intrusted to them by the Act of 1815, they are anxious not to be understood as regarding the performance of those duties as onerous or distasteful; on the contrary, they have ever regarded the trust confided to them by the Legislature as of the most honourable character: they look back upon the public good which they have been enabled to effect with the highest feelings of pride and satisfaction; and they will never voluntarily relinquish the performance of their duties but under the strongest conviction that the public will be benefited by the change in the law which would transfer those duties to other hands.

That the Society would not have intruded the expression of their feelings upon the Secretary of State at the present moment, if an impression had not gone forth that the Society were willing to be relieved from the labours imposed upon them by the Act of 1815, and if they had not thought that their silence might give some sanction to such an impression.

That the Society have during the agitation, and, unhappily, the dissensions to which the discussion of the question of Medical Reform has given rise, steadily persevered in carrying out the objects of the Legislature, by improving the curriculum of study, and raising the standard of qualification of those who seek their Certificate, and they will continue to do so as long as they retain the confidence of the Legislature; and the Society refer with the utmost satisfaction to the evidence given before successive Committees of the House of Commons on medical affairs, and to the concurrent testimony of members of all branches of the Profession, as to the result which has attended the Society's administration of the Apothecaries' Act.

That the Society are, from their experience of the actual working of the law, fully sensible of its defects; that they are, as they ever have been, anxious to remedy those defects; and are prepared to lay before the Secretary of State such suggestions for the amendment of the Act as would, in their opinion, go far to remove the objections which exist to its provisions, and would, at least, remove many of the impediments in the way of a satisfactory settlement of the complicated question of Medical Reform, not only as regards England and Wales, but the kingdom at large.

On behalf of the Society,

J. B. EYLES, Master.

PLEURO-PNEUMONIA AMONGST CATTLE.

By GEORGE WATERS, *Jun.*, *M.R.C.V.S.*, *Corn Exchange Hill, Cambridge.*

PRIZE ESSAY.

[THIS "Essay," for which we are indebted to its author, Mr. Geo. Waters, jun., occupies the first place on the list of papers competing for the prize of fifty guineas for the best production on the subject. The contest was "open to all England;" consequently no little merit attaches to the victory. And we are happy to be able to add, that in this, as in former instances of the kind, fortune has favoured the veterinary profession.]

The present epizootic disease, designated "Pleuro-pneumonia," from πλευρα, the side, or membrane enveloping the lungs, and πνευμων, the lungs, from its being confined principally to those parts—first appeared in this country about the year 1841—previous to which period it had existed and committed great ravages among the cattle in Ireland, and on the continent—and in England a very great proportion of the whole number of cattle which have been affected have died.

It is a rare thing for any epizootic disease to rage alone—that is, without being preceded or followed by some other. It will be remembered that the vesicular epizootic, which first appeared here about the year 1839, was the forerunner, and is to this day the companion, of the present pleuro-pulmonic disease; but the ultimate consequences of each disorder differ as widely as they do in

character. The vesicular epizootic, on the one hand, spared but few animals from its attack, and was seldom if ever fatal; whereas, on the other, the disease in question affects few in comparison, but those in so dangerous a manner that but a very small proportion of those affected recover.

I shall first attempt a description of the disease, treating slightly the premonitory symptoms—mentioning those only which may be referred to the organs of respiration more especially. I am induced to do this, because I shall have occasion, in following out the order proposed by the committee of the Royal Agricultural Society of England with reference to several points connected with the disease, to treat of the "premonitory symptoms" at greater length.

"The first and most constant symptom of this disorder is a cough of a dry or husky character, which may continue for a greater or less period before other symptoms of a more decided nature present themselves. The frequency and severity of this cough may be influenced by circumstances: for instance, I have observed when the animal is fed exclusively upon hay, straw, &c., or when it is lodged in a close ill-ventilated hovel, or turned into a low, damp, marshy spot, the cough has become aggravated, and other symptoms of the disease have more speedily presented themselves. Again, the age and condition of the animal appear to govern its duration in this stage of the disorder: I have observed it, in young and well-conditioned animals, to continue longer than in those which are old and emaciated.

"I will now inquire what modifications of the healthy sounds may be detected in the chest in this stage of the malady. In the majority of instances no morbid sounds have been discovered; but I have occasionally found a crepitation or rattling along the upper borders and bases of the lungs. In some cases the animal has been noticed to cough up now and then, and discharge by the mouth, a thick mucous secretion.

"I consider that the occurrence of this cough is an index to the commencement of a mild character of bronchitis, and which may exist for some time previous to the lung or pleura becoming diseased. Those symptoms which generally exhibit themselves at the time when the services of the veterinary surgeon are usually required, and which I consider indicate the second stage of the disease, are the following, for the better description of which I will instance a milch cow. If, in a meadow with others, she is observed to separate herself from her companions, and to be generally lying down whilst the others are feeding, with an aspect spiritless and haggard, staring coat, surface of skin rigid, and

almost immoveable over the ribs, increased temperature of horns, muzzle dry, back somewhat raised, head projected forwards and inclined downwards, impaired appetite, and rumination partially or totally suspended; pulse increased in frequency and oppressed, pressure on ribs and spine produce flinching, respiration quickened, and accompanied by a peculiar grunting and grating of teeth, which symptoms of pain are aggravated upon coughing, as also upon any alteration of the position of the animal; decreased secretion of milk, with alteration of colour, being usually of a yellowish cast; it sometimes coagulates when boiled; tenderness of udder and teats upon being milked; bowels costive, and, when moved, the fæces are hard and lumpy; urine scanty and paler than natural; cough short and frequent, and increased upon exertion.

"Upon applying the ear gently to the sides of the chest, so as not to frighten the animal, one or other is found to be affected, and the right much more frequently than the left; sometimes, though rarely, both are implicated: but whichever lung be affected, the respiratory murmur in the other becomes louder and coarser than usual. The sound, on percussion, is natural.

"On the affected side, if the pleura should be inflamed coincident with the lung or a portion of it, a peculiar crackling or fine crepitus is audible: this is limited to a small space in the beginning, but as the disease advances it becomes more diffused. This crepitus at first may be mingled with the ordinary respiratory murmur, which it nearly obscures: as the inflammation advances, it becomes more and more decided, until at length no respiratory murmur whatever can be heard throughout the part or parts occupied by the crackling. As the morbid action proceeds, the crepitus gradually disappears, giving place to other sounds: one of a puffing or blowing description may be heard during inspiration, as if confined to the bronchial tubes, and, when the animal grunts or coughs, the sound is conveyed directly to the ear. These sounds are most distinctly heard when the inflammation is confined to the upper and anterior parts of the lung, and when no effusion has taken place into the cavity of the pleura.

"At the same time, and in variable spots, another symptom presents itself to the ear, viz., that of friction or rather creaking: this sound may be heard both on inspiration and expiration, but is more pronounced during the former; it is very inconstant, both as regards its duration and locality: for instance, we have heard it most distinctly in one particular spot one day, when no trace of it could be detected in the same place on the following.

"On striking the affected side at this stage of the complaint, a

dull sound is usually elicited to a greater or less extent; but this will depend upon the amount of lung that has become inflamed, and the presence or absence of fluid in the chest.

"These sounds offer various modifications accordingly as the pleura or substance of the lung itself is most inflamed: thus, if pneumonia predominates, the creaking is but slightly, if at all, heard, and the dulness on percussion is not so flat and general; while, if a larger proportionate amount of pleurisy exists, bronchial respiration, broncophony, and the rubbing sound, may be heard, while little or no crepitation is audible. A marked difference is also observed on percussion; the dulness is more defined and dead, and principally confined to the lower parts of the chest, owing to the presence of fluid, which, in all the cases we have examined, has become rapidly and abundantly effused when much pleurisy existed.

"Should the animal survive this state, which it seldom does, the third and last stage of the disorder now rapidly sets in, and we may be certain of its existence when we observe a death-like appearance in the aspect of the animal: the surface of the skin becomes cold and moist; coldness of horns, ears, and extremities; head still projected, with nose thrust into a corner, if in a hovel or stall; extreme restlessness; while she stands, which she frequently does, her fore-legs are placed wide apart, while her hind-legs are crossed one over the other; she is heedless of the approach of any one; respiration is rapid and intensely laborious; fetid breath; there is a dirty-coloured viscid fluid occasionally mixed with purulent-looking matter discharged from the mouth; no secretion of milk; pulse rapid and weak, sometimes intermittent; extreme emaciation and prostration of strength, with inability to cough or swallow. In the majority of cases no sound whatever is heard on the diseased side, except a loud gurgling, which is audible at some distance: general dulness on percussion. This condition may continue for a few days, when she becomes reduced to a mere skeleton. At last her groans grow louder and more frequent; she makes ineffectual efforts to breathe from apparent suffocation; total insensibility sets in, which is quickly followed by death."

In our next we shall give an outline of the essayist's "morbid anatomy of the disease," his opinions in regard to its infectious qualities, and its suggestions of treatment.

Journal of the Royal Agricultural Society of England.

Feeding Stock with Prepared Food.

[From " The Farmer's Magazine."]

Many of your readers will, doubtless, remember that, in the Transactions of the Yorkshire Agricultural Society for 1846, a prize essay or report was published on the feeding of stock with prepared food. The straightforward manner in which Mr. Marshall treated the subject in his report, and the high character of the gentlemen by whose evidence he supported his statements, attracted a good deal of attention then, and much anxiety has since been felt to ascertain if longer experience confirmed the favourable opinions expressed respecting this novel system.

With a view to make this subject fully known, Mr. Hutton, of Sowber Hill, near Northallerton, invited a large party of intelligent and influential agriculturists to visit him on Thursday last, and spend the whole of the day in examining his stock, and in witnessing the process of preparing and serving the food.

To parties at a distance it may be here necessary to state, that Mr. Hutton farms his own property to the extent of 1400 acres, and occupies a leading position among the agriculturists of his neighbourhood.

Being kindly invited to join this party, I arrived at Sowber Hill about ten o'clock on Thursday morning, and was immediately shewn through the various farm offices by Mr. Hutton. We went first to the houses containing the fat cattle, where there were fifty heifers tied up, all looking very healthy, exceedingly clean, and nearly ready for the butcher. They had finished their first foddering of cooked food, and I think only one beast out of the fifty was standing when we went round, and for the restlessness of this animal a sufficient reason was given.

We then went to the boiler-house, and I saw the boiled linseed mixed with the chaff for the horses at noon. We next proceeded to the house where the straw is cut into chaff. A powerful straw-cutter, made by Crosskill, was at work, driven by two horses. Barley-straw was being cut, in the rough state in which it came from the thrashing-machine: the machine was cutting at a great rate, and, considering the state of the straw, made good work. In the same building, but in a story over the straw-cutter, one of Clyburn's bruising machines is fixed, and at a later period in the day we saw it bruise, very satisfactorily, both linseed and oats. This building is quite separate from the thrashing barn; for this immense establishment keeps two horses constantly at work, cutting straw and bruising corn; and the straw of nearly four large corn-stacks is required each week, at this season of the year, for

chopping or for bedding. We then went through the fold-yards containing the lean stock.

Mr. Hutton's attention being now occupied by the arrival of the rest of the company, I quietly walked back to the steaming-house, in order to examine more thoroughly the house itself and the apparatus it contained.

The house is a plain building of one story, open to the roof. It is twenty-four feet in length, fifteen feet in breadth, and about fifteen feet to the eave. The floor is paved with brick. There are three moderate-sized windows in the walls, and a small ventilator in the roof. The furnace and steam-boiler are placed in one corner of the room, and sunk about three feet below the floor. Closely adjoining the steam-boiler, but on a level with the floor, the boilers, three in number, for holding the linseed, are placed in a row against the wall. The metal of these boilers is double, and the steam which boils the linseed is conducted by pipes into the space between the inner and the outer case of the boilers. A force-pump stands in a corner of the house, and water is thrown by it into a large cistern, from which, by ball taps, the steam-boiler is supplied. The chopped straw and bruised linseed and corn are all weighed before they are taken to the steaming-house, and no more is brought there than is wanted at a time.

The cost of the steaming apparatus, I understand, is about £50. The house could not cost much, if built new; but it appeared to have been an old house—probably a hind's cottage—applied to its present purpose.

About one o'clock we had lunch, and at half-past went to the steaming-house, where we saw the food mixed for the four o'clock feed of the fifty fat cattle. The chopped straw, in due proportion, was first spread upon the floor, about two feet thick, and with this the proper quantity of bean-meal was well mixed. About five stone of bruised linseed, with 120 gallons of water, had been put into the boiler three hours before (that time being necessary for cooking it properly), and was now a thick oily kind of broth. This liquid was laved out of the boilers into pails, and was thrown boiling hot upon the heap of chopped straw and meal, with which, by rapid turning, it was at length thoroughly blended. It was then shovelled into a tidy heap in a corner of the room, and smoothed down by patting with the back of the shovel. In this state it was left for an hour and a half; and in the mean time we walked over the farm.

It would be easy of me to write of various things that interested me during this walk, especially the draining and fencing; but respect for your space induces me to confine my remarks to the

growth of linseed—a point intimately connected with the subject of this article.

One of the fields through which we passed was cropped last year with linseed on one part, and with oats on the other. I was anxious to see the effect of the linseed crop upon the land, as to its encouraging the growth of couch grass—a point held in much apprehension by many farmers. I was accompanied by a practical man of close observation; and after examining this field with great attention, we were both of opinion that the land—about six acres—on which the linseed was grown was quite as clean as that which had been cropped with oats; but as the latter had been mown, and the former pulled, one stubble *seemed* more foul than the other. The linseed appeared a good, bright sample; and Mr. Hutton calculated the crop to average twenty-four bushels per acre.

A little before four o'clock we returned to the homestead, and saw all the fat cattle receive their last meal of the cooked food we had seen prepared before we walked into the fields.

An ordinary feeding basketful was given, in its warm state, to each animal; and it seemed to be eaten very greedily.

The boiler-house is not very near the feeding-houses; but eight baskets filled with this food were placed at one time upon a sort of long barrow, which was wheeled to each house: thus the whole number of cattle were fed by two men in about twenty minutes.

We now adjourned to the house, where our party, consisting of about twenty-five, sat down to an excellent dinner. After the usual loyal toasts, Mr. Hutton produced a carefully prepared statement of the cost of this method of feeding. The following is a copy of that part which related to fat cattle:—

For one Beast.

	s.	*d.*
13 lbs. of linseed bruised, or 2 lbs. per day for six days, and 1 lb. for Sunday	1	9
32 lbs. of ground corn, or 5 lbs. per day for six days, and 2½ lbs. for Sunday—at 1d. per lb.	2	8
35 lbs. of hybrid turnips, given twice a-day for six days, and thrice on Sunday	1	6
Coals, 1½d.; labour on each beast, 6d.	0	7½
Total cost of each beast, per week	6	6½

The horses, cows, and young stock, also get some of the cooked food, evidently with great advantage; but I do not think it necessary to state the calculated cost of this.

In conclusion, as Mr. Hutton remarked, it is now satisfactorily proved that fat cattle of the best quality may be produced on

farms where no hay is grown; that double the usual number of cattle may, by this method, be fattened on the ordinary quantity of turnips; and that abundance of the richest manure may, consequently, be made at home.

Some modifications of this method of feeding would be required on small holdings, but to occupiers of large farms I strongly recommend its immediate adoption.

I much regret that urgent business called me away from Mr. Hutton's directly after dinner, for I thus lost the advantage of hearing the valuable remarks which I feel sure would be made by many of the experienced gentlemen who were present.

N. J. TURNER.

Richmond, Yorkshire, Dec. 27, 1847.

HEREDITARY TENDENCY TO DISEASE AND THE REPRODUCTION OF MALFORMATION IN THE PROGENY OF BREEDING ANIMALS.

By Mr. J. M'GILLAVRAY, *V.S., Huntly.*

I HAVE long been of opinion, that, in the breeding of young horses, farmers and others pay too little attention to the physical qualifications and general conformations of the animals they employ as parents. It is an *old,* a true, and well-known saying, that "like produces like;" and it requires only a careful observation of facts to be convinced of the correctness of this laconic maxim. From circumstances that have forced themselves on my notice for some time back, I have been led to pay particular attention to the above branch of our rural economy. The circumstances to which I more immediately refer consist in a certain uprightness of pastern occurring in foals, in consequence of which they walk too much on the toe or front part of the hoof. These parts are in the young animals extremely soft—they are soon worn off—the toe becomes too short; as a matter of course, this increases the evil: the foot is thus placed in a false position, as regards the limb and the animal. The coronet bone is pushed into the upper part of the hoof, which then projects over the lower part or toe; and very soon the little animal is fairly *knuckled* forward, and can neither stand nor walk but with extreme difficulty. A peculiar method of shoeing becomes necessary, so as to bring the foot again to its proper position, and save the beast from utter uselessness.

It being a fact that the evils alluded to have appeared among the progeny of certain stallions, and by a variety of mares, leaves little room to doubt but that the stallion is the cause; and we are

of opinion that the cause is hereditary, and may be transmitted from sire to son. Indeed, it is natural to suppose that, if "the *good* qualities of animals are communicable to their offspring, so are the *bad*." It is the proper study and application of these principles that constitutes the grand secret of improving the different breeds of animals. And not only may natural defects be communicated from one generation to another generation, but deformities, the result of accidents, are also communicable. In the endeavour to investigate the above subject abundant evidence has been found to warrant this conclusion.

"A stallion named 'Dominie Samson,' who had run very successfully in this country, but was fired in both hocks for *curbs*, was purchased by the East India Company, and sent out as a covering stallion to the stud at Buxar, where, for five years, he had much about forty foals annually: they were generally affected with *spavins* or *curbs*, so much so, that only one of his stock passed into the cavalry; and, consequently, he was discarded from the Company's stud."

A Major Hunter also records that he knew a "stallion that had encysted tumours at the point of his elbows, and most of his stock were affected in the same manner."

"An Irish stallion, named 'Musician,' had very bad fore-legs, and none of his stock were strong in the fore-extremities."

An accidental natural defect is often propagated from parents to their offspring, and continues thus as a peculiar breed. Mr. Blaine mentions a singular breed of swine that did not *part* the hoof, but were what naturalists calls solidungular, having *feet* resembling the *feet of horses*. There is also the *Ancon*, or otter breed of sheep, described by Colonel Humphries, in the Phil. Trans. for 1813, part 1. These sheep were derived from an American lamb, born with legs deformed and most disproportionately short to the rest of his body; the fore-legs were extremely crooked, which, added to their shortness, rendered him unable to run or break fences. With these qualities it was determined to attempt a breed of this kind; and, by confining the intercourse between him and his future offspring, it succeeded, and the Ancon or otter breed is now established.

In the records of the transactions of the Linnean Society of London is found an account, by Mr. Milne, of a pregnant cat, his own property, the end of whose tail was trodden on with so much violence as appeared to give the animal intense pain. When she kittened, five young ones appeared, perfect in every other respect except the tail, which was, in each one of them, distorted near the end, and enlarged into a cartilaginous knob. In this case it is probable the tail of the animal had been so much bruised as to

stop the circulation; the vessels would become enlarged at the ends, and nature, true to the principle that "like produces like," produced kittens with the deformity alluded to. Mr. Blaine also mentions his having seen a breed of tailless cats, the offspring of one accidentally born without a tail.

The above facts shew the importance of paying proper attention to every thing connected with the animals intended for breeding, more especially the male. The female being the property of the farmer, with all her defects he is likely to be well acquainted: not so the stallion; he often comes from a distance, little of his history or character can be accurately ascertained, and, therefore, his physical conformation ought to be made the subject of severe scrutiny.

During the season that is now past, I have required to get a good many foals shod in consequence of the fault mentioned at the beginning of this paper. And, as the form of shoe I have adopted is peculiar, and, so far as I have been able to ascertain, has proved effectual in removing the evil, should any of the readers of this journal have occasion for such an operation, I shall be glad to furnish him with the necessary information regarding the construction of the shoe, &c., on application.

Scottish Farmer.

Foreign Extracts.

Chemico-Physiological Considerations on the Action of Diuretics.

By M. Tabourin.

Evacuants naturally divide themselves into two classes,—*direct* and *indirect*. The first admit of application to the very surfaces upon which they are intended to take effect, as *sialogogues*, *sternutatories*, *vomits* and *purgatives*. But indirect evacuants exert no action upon organs they are intended to affect until they have passed through the current of the circulation and become mingled with the blood, such as *diuretics*, *sternutatories*, *sudorifics*, and *expectorants*. We can, indeed, provoke perspiration and expectoration more or less profuse by direct means; but such medication is never effectual without the action of general and internal agents.

Among indirect evacuants, diuretics incontestably occupy the

first place, whether it be on account of their certainty of operation, or of their energetic and extensive influence in the animal economy.

Under the denomination of *diuretics* are included all such medicines as act particularly on the urinary passages, which secretions and excretions they render more active. Their most usual and constant effect is to augment the quantity of urine furnished by the kidneys in any given time; but they often likewise produce urine modified in its chemical composition, as also some change, physiological or pathological, in the secretory apparatus over which they exert their influence.

Diuresis or acceleration of the secretion is not produced by diuretic medicines alone. This secretion, in its physiological condition even, presents an activity exceeding variable, capable of being modified afresh, under other circumstances, by a multitude of causes. These causes are, *hygienic* (alimentation), physiological (greater or less activity of the skin), pathological (asthenic diseases of the kidneys), pharmaceutical (a great number of medicaments and poisons). We must also take account of the natural or accidental variations of the urinary secretion in order to comprehend clearly diuretic medication.

Diuretics are furnished by all the three kingdoms of nature, which account for their chemical composition being so variable.

They may be administered through the tegumental surface or through the veins. Cutaneous friction is sometimes employed for small animals, and drinks for the large herbivora. The solid form is only adapted for active diuretics. Solution in some suitable liquid best insures the operation of the generality of diuretics.

Diuretic drinks are administered either cold or hot. When hot, they are apt to exert more action on the skin. In whatever way diuretics enter the circulating medium, once mingled with the blood, they make their way by a sort of elective affinity to the kidneys, which they excite, or through which they become filtered in some way, and so make their exit out of the system. Through such special action, varied by each diuretic, it is that acceleration of the urinary secretion is produced.

These medicaments possess nothing in common save their evident effect, viz. *diuresis*. In regard to the medium through which they individually or in groups produce this effect, it is as variable as their chemical nature. This will come to be better understood when we shall have investigated the nature of the urinary secretion, such as physiological chemistry, in these recent days, has determined it.

Physiologically, the urinary secretion is essentially *excrementitious;* that is to say, that the matters which it separates from

the blood are altogether unfit for the nutrition of the body, and ought to be completely ejected out of the system. Chemically, this secretion is especially *depuratory*, inasmuch as it is constantly taking matters out of the blood useless or hurtful, which are the products either of absorption or of the process of decomposition, the accompaniment of nutrition. In both these points of view the urinary apparatus ought to be considered as the veritable *regulator* of nutrition, since their office is to maintain in just equilibrium the divers organic and inorganic elements constituting the nutritive fluid, *par excellence*, the BLOOD.

It is, in fact, through the urinary passages that are continually ejected, as useless or hurtful, the following principles:—1. Water introduced by drink into the circulating fluid, at a time that it is not required to augment the proportion of serum in the blood, or to repair the losses occasioned in it by the divers secretions and excretions; —2dly, The innutritious heterogeneous principles which the divers absorptions, recrementitious or excrementitious, liquid or gaseous, may have accidentally introduced into the nutritive fluids;—3dly, Matters belonging to other depuratory secretions, natural or accidental, whenever these may have become suppressed or have become diminished in their activity:—4thly, Inorganic matters, the salts which in the process of decomposition have become separated from the body as no longer useful:—5thly, Viruses, poisons, miasms, that might act as ferments in the nutritive fluids and produce grave disorders in the economy:—6thly, and lastly, The *azotic* principles eliminated at every instant from the body as in excess of the azote introduced into the animal economy by the aliments for the wants of the nutritive function, or as the residue of the functional decomposition of the tissues.

The experiments of modern chemists have shewn, in fact, in the most evident manner, that animals do not absorb azote from the atmosphere in the act of respiration; that all the azote required for nutrition is furnished by the food; and that, ultimately, the superfluous part of this principle is ejected almost entirely with the urine under the form of *urea*, *urates*, *uric acids*, *hyppuric*, &c., according to the animals.

Of all the chemists, M. Dumas has described these processes with the greatest perspicuity. After having demonstrated that animal life is supported by veritable combustion; that the carbon and hydrogen of the food, combusted within the organic passages by the inspired air, are ejected during respiration in the forms of carbonic acid and watery vapour; that the azote of the air is never assimilated in the act of respiration; that that of the aliments, after having served for nutrition, is cast out in small quantity, accidentally, by the lungs, in the largest proportion by the urinary

organs, &c. After having established these leading principles of physiological chemistry, this celebrated chemist continues thus:—

"Under what form does this azote make its escape through the urinary passages? Under the form of ammonia. And here comes one of those observations which never fail to fill us with admiration at the beautiful simplicity of Nature's operations.

"If, in the general course of things, we return to the atmosphere the azote which certain vegetables are able at once to make use of, we might expect also to furnish the air with ammonia, a product so necessary to the existence and development of most vegetables.

"Such is the principal result of the urinary secretion; viz., the emission of ammonia, which returns either to the soil or to the air.

"Ought we not, however, here to remark that the urinary organs will become altered in their functions and vitality by the contact of ammonia, the same as they will by carbonate of ammonia?—and so Nature causes urea to be an excretion as well of man as of animals.

"UREA is carbonate of ammonia*; that is to say, carbonic acid like unto that expired from the lungs, and to the ammonia so grateful to plants. But this carbonate of ammonia has been robbed of oxygen and hydrogen, ingredients essential to the formation of the molecules of water.

"Deprived of water, carbonate of ammonia becomes *urea;* in that state it is neuter, inactive against animal membrane:—in that state it may traverse the kidneys, the ureters, the bladder, without inflaming them. Once, however, in contact with air, veritable fermentation commences in it, which restores to it these two watery molecules, converting this urea into true carbonate of ammonia, volatile and incapable of exhalation into air; soluble, capable of being taken up by the rain, and so destined to pass from earth to air and from air to earth, until the time shall arrive when, imbibed by the roots of some plant and elaborated by it, it becomes converted afresh into organic matter, and serves as food to the herbivora, &c.†"

What is demonstrative of these chemical theories, or rather let us say, these novel truths, is that the quantity of urea excreted through the urinary apparatus is great in proportion as the regimen of the animal contains the mere azote. So that carnivorous and omnivorous animals constantly eject with their urine a large quantity of urea, which, through fermentation in the air, develops

* According to Wohler, it likewise represents *cyanate of ammonia*, which is the product of the oxydation of cyanogene and oxyde of ammonium or liquid ammonia.

† Chemical Statistic of Organized Beings, p. 37 and following.

that fœtid ammoniacal odour the putrified urine of such animals possesses. With herbivora, whose alimentary regimen is less rich in azote, the urea is in a great measure replaced by the *hippuric acid* or *uro-benzoic*, more carbonized and hydrogenated than urea, but much less azotized.

Such is the physiological and chemical end answered by the urinary secretion. And now we know this, we shall more easily interpret the action of diuretic medicine, and hit upon the nature of the modifications it may work in the nutritive liquids and impart to the animal organization, as well in as out of health.

These medicines, though for the most part endowed with special properties, such as enable them to act on the organization by a mechanism peculiar to themselves, naturally range themselves into the four following groups, of which we are about to sketch the chief features of their chemico-physiological history :—

Cold Diuretics.		Warm Diuretics.	
1. Aqueous and Mucilaginous.	Water Linseed Marshmallow Mallows Borage Pellitory Rest Harrow Asparagus.	3. Sedative.	Digitalis Purpurea Scilla Maritima Colchicum Autumnale Cantharidine Terebinthine.
2. Alkaline.	Carbonates Bi Carbonates Azotates Sulphates Phosphates Borates Acetates Tartrates Citrates To wit, of Potass & Soda.	4. Balsamic.	Copaiba Balms Resins Hydrocarbonated Essences.

1. *Aqueous and Mucilaginous Diuretics.*

Medicaments composing this group are, of all diuretics, those which produce diuresis by the most simple and unirritating agency, unexciting to the urinary apparatus. Their action is mild, gradual, and yet not the less certain.

The active principles of these medicaments are water, mucilage, and some saline principles.

Water is essentially a diuretic. Every thing absorbed in drinks, and which passes into the circulating fluid, is in a great measure ejected by the kidneys; that which is retained serving to preserve the just proportions of the serous parts of the blood, and to furnish the vehicle required for the materials of the other secretions or exhalations.

The action of water on the urinary organs is so rapid, so prompt, that many physicians have no desire for any other diuretic, or at least have attributed to this liquid the greatest share in the action of medicines directing their operation on the urinary apparatus. And although there is much exaggeration in such views, it is nevertheless not the less certain that the liquid form renders the action of most diuretic medicines more prompt and more certain.

Through what mechanism does water cause diuresis? This admits of several interpretations:—

First, the urinary apparatus being the regulator for the composition of nutritive fluids, it would eject out of the system such of the water taken in by drink as was not required for nutrition: hence the reason why one passes in urine, after every repast, the largest portion of the fluid *ingesta.* (*urina potus*).

On the other hand, water is in some measure the necessary vehicle for the excretion of useless matters out of the system, be they organic or inorganic. In the same manner as the expired air carries with it out of the lungs carbonic acid and aqueous vapour, the products of hematosis, so the water taken in as drink, having reached the blood, dissolves and carries with it through its organic passages the suroxyde products furnished by nutrition; such as *urea, uric* or *hippuric acid,* the saline principles of organs and liquids (*Urina decoctus.*) The experiments of M. Becquerel have shewn in the clearest manner the diuretic and spoliative effects of water. This fluid does not pass out pure of the system after having passed through the kidneys. It always becomes imbued with saline principles, as well as the products of transformation of organs; so that, according to the quantity of water drunk, will the proportion of solid matters in the urine be excreted within any given time. A *litre** of water causing the evacuation of 33 *grammes**, 85 *centigrammes** of solid matters; 2 *litres* provoking the expulsion of 43 grammes, 88 centigrammes of the same matters. Consequently, in the diuretic effect of water, the kidneys do not limit their action to the elimination of the aqueous excess, but are equally solicited to secrete other matters susceptible of elimination along with it through the same passage†.

* A French *litre* is a little more than 1¾ pint English; a *gramme* is 15·4 grains Troy; a *centigramme*, ·154 Troy grains.

† Becquerel. *Semeiotique des urines.* Paris. 1841.

In a word, the absorbed water augments the quantity of serum of the blood, and alters the assimilable ingredients of the liquid, and may in the long run even attack the globules themselves, and so produce a veritable cachectic condition. Here, then, comes the reason why the system, in its admirable economy, rids itself as actively as possible, through the medium of the kidneys, of this excess of liquid, so as not to suffer itself to be harmed or emaciated through it, as in cachexia, when its proportion becomes continually augmented for a lapse of time, and when the debilitated organs can no longer suffer its expulsion, or when the discharges are not in ratio with the supplies.

So that, on the whole, the water taken in with the drink is intended to quench the thirst by maintaining the aqueous part of the humours in just proportion. The part which exceeds the want of the economy is cast out, either through the kidneys or through the skin. The quantity expelled in the form of urine is always in an inverse ratio with that exhaled by transpiration, and both serve as a vehicle for those fixed principles which are intended to be thrown off by the two passages of depuratory secretion.

Mucilage, which seems to be nothing more than a gummy principle combined with water and some saline matters, is likewise a pretty certain diuretic: given in large proportion in drinks, this principle is neither digested nor absorbed, and passes out through the alimentary passages scarcely altered, producing a relaxing effect. Less concentrated mucilaginous drinks are absorbed by the mesenteric veins, and the gummy principle is carried into the blood. If it exists in small quantity, it is attacked by pulmonary combustion as a mutual principle, unazotized, of vegetable origin, serving to keep up animal heat. In the case in which it exists in great proportion, it is not entirely consumed in the circulatory passages, but quits the system nearly in its natural state through the urinary canals. In fact, experience shews that, under the influence of mucilaginous drinks, the urine becomes thick, ropy, soft to the feel, and flows in abundance, gliding smoothly along the genito-urinary mucous lining; thus it is that this, well enough known to practitioners, is frequently introduced into practice in irritable affections of the urinary apparatus.

To what should we ascribe the diuretic effect of mucilage?—to the large quantity of water it contains, or to the alkaline and calcareous salts in it in pretty considerable proportion? Probably to both. In regard to the water, the question does not admit of a doubt; and as to the salts, they contain about a tenth in weight of the mucilage of linseed, and are, perhaps, in larger proportion still in that of plants called nitrous, as borage and pellitory: and if, on the other hand, we take into account the extreme state of division in which these salts are found, we could hardly refuse to

admit them, in certain proportion at least, into the diuretic effects of mucilage. In fine, the slight alterableness of this principle by pulmonary combustion ought also to be reckoned among the causes excitive of its action on the kidneys.

Alkaline Diuretics.

All salts having for their base potass and soda, and even to a certain extent those of other bases of the first class, whatever be their kind, appear to possess purgative and diuretic properties. Nevertheless, practitioners do not employ them indifferently to answer one another's medical effects; so that, while one kind are pretty exclusively employed as purgatives, the others are used more particularly as diuretics. It is of consequence to know if this division, the result of practice, coincides with the veritable principles of science, and if there is nothing to add to what the practitioner on this point has taught us.

Messrs. Laveran and Millon have made numberless experiments on the effects of alkaline salts in large and in small doses. They have constantly observed, when they gave salts in strong doses, that they purged, and that in fractional doses they determined diuresis: this, at least, is the result they have come to from trials with the tartrate of potass and soda (tartarized antimony), and the sulphate of soda. Moreover, they have made this interesting observation, that salts ejected through the anus had not undergone any chemical change; while the alkaline salts with organic acids, which passed off through the urinary passages, were constantly converted into *carbonates*, the consequence of veritable combustion or oxydation of their electro-negative principle*. Lastly, these authors have remarked a notable and constant augmentation in the proportion of *urea* in the alkaline diuresis, which indicates increased activity in the operation of decomposition and combustion of the body under the influence of alkaline salts.

Out of their combined observations Messrs. Millon and Laveran have deduced the following conclusions:—1. Strong individuals digest and transform more effectually organic salts into carbonates, and the diuretic effect is more evident. 2. With weak individuals the conversion of salts into carbonates and the diuresis are less determinable, while purgation is constant. 3. Nervous diseases are favourable to combustion of organic salts, and their change into carbonates. 4. The diseases of the digestive canal and fever are unfavourable to diuresis, and favourable to purgation. 5. Small doses, and the protracted exhibition of these salts, at once favour their absorption and decomposition†.

* A fact observed by Gilbert Blane and Wohler.

† Report of the Sittings of the Academy of Sciences of the Institute, vol. xix, p. 347.

Why do the alkaline salts purge in large doses, and produce diuresis in fractional doses? We subjoin the explanation given by Justus Liebeg.

This celebrated chemist lays it down as a principle, that the animal membranes no longer absorb saline solutions when they themselves are more rich in saline principles than the blood which circulates through their vessels. Those which are highly concentrated, such as saline purgative drinks for example, give rise, even within the intestine, to an action of *exosmose*, by which the serum of the blood is drawn out of its vessels by the saline solution, which is highly attractive of water. From this effect results an abundant serous exhalation, and, as a consequence, purgation. Saline solutions, on the contrary, which are less charged with salts than the serum of the blood, are attracted by this latter (*endosmose*) through the intestinal mucous membrane, whence it passes into the blood, and quits through the urinary passages*.

M. Poiscuille, in studying the endosmose of the serum of the blood and saline solutions more or less concentrated, has succeeded in experimentally demonstrating the exactitude of the theory of Liebeg. He has proved that endosmose always takes place from serum to saline solution as often as the latter was sufficiently concentrated. Thus the neutral tartrate of potass, the sulphate of soda, the sulphate, nitrate, and phosphate of potass, marine salt, ioduret of potassium, alum, ever attract the current of serum to them, and the more powerfully as the saline solution is more concentrated; on the contrary, reducing the salts down to very weak proportions, as, for example, one part of phosphate of soda to one hundred parts of water, the current becomes turned from the salt to the serum.

This physiologist compares the effects produced in endosmose to what is passing upon the surface of the intestinal tube under the influence of divers medicamentary principles. Does anybody administer an alkaline salt in concentrated solution?—the serum of the blood escapes through its capillary vessels and bedews the intestinal villosities; then is endosmose of the serous parts of the blood in the interior of the intestine an afflux of fluids, and, in consequence, follows purgation. On the contrary, if the solution is diluted, there is endosmose the other way: the salt penetrates through into the circulation, and escapes through the kidneys by producing diuresis.†

So that it is satisfactorily demonstrated that the alkaline salts may prove purgative or diuretic, indifferently, according to the doses in which they are given. From this fact results an important precept in pharmacology, which is, that we lose more than

* Liebig: Chemistry applied to Vegetable Physiology and Agriculture.
† Compte-Rendu de l'Academie des Sciences, vol. xix, p. 994.

we gain in forcing doses of diuretic salts; and that it is, on the contrary, better to divide them, and repeat them as often as required.

When we administer them in a state of dilution, endosmose and absorption rapidly carry the salts into the circulation; whence they soon pass into the urinary organs, and produce a potent diuresis. This is a point well established in the history of alkaline diuretics. But how do the salts produce this extraordinary activity in the secretion and excretion of urine? On this point science is less positive, and admits of divers hypotheses more or less probable.

If the urinary apparatus is designed to maintain the watery constituents of the blood in proper proportion, we may say as much of the other components of this nutritive fluid, and especially of its saline materials. Therefore, if salts penetrate into the blood in quantity in excess of the requirements of the system, the kidneys separate them by little and little from the fluid, until it retains no more than its normal proportion of them. Such is the physiological explanation given of the diuretic action of the alkaline salts.

Chemistry, however, opens to us another interpretation of this. M. Chevreul was the first to establish that alkaline substances possessed the property of facilitating the chemical metamorphoses of the nutritive principles introduced into the blood through absorption, and submitted to the combustible influence of the expired air. Experience has since completely confirmed the exactitude of this theory; and the essays of Messrs. Laveran and Millon leave not the slightest doubt on this head. They have witnessed constantly the augmented proportion of urea in alkaline urine; evidently shewing that the alkaline ingredients facilitated the organic combustion, and accelerated the transformation of the tissues into refuse matters to be thrown off with the urine as henceforth unsuitable for nutrition. Such is the chief action assigned by chemistry to these agents; but it is not the only one. There is another equally important, which must not be omitted, on account of its likelihood to lead to some practical remarks.

The organisable elements of the blood, fibrin, albumen, and caseine, are very soluble in alkaline fluids, and owe their state of solution or division in the blood to salts of this nature contained in that fluid. The natural quantity of such salts is in the proportion necessary for the fluidity of the blood, beyond which normal ratio it does not pass. The organisable elements are dissolved or divided in such manner as to pass without difficulty through the smallest passages of the organism, without detriment either to their plastic properties or to their coagulability. If we now suppose that the proportion of the alkaline principles of the blood become augmented, we ought to admit that their state of division, of tenuity

of the primary elements of the blood, increases in proportion, and then ought to arrive a time when they have lost their organisable properties; and this, in fact, is what observation shews to be the case.

M. Denis, of Commercy, and from him the majority of chemists, have come to the conclusion, that all these alkaline salts possess the property of attracting, dissolving, and even greatly altering, the fibrin, according to which property they have been ranged in the following order,—chloruret of barium, nitrate of potass, sulphate of potass, sulphate of soda, chloruret of potassium, sodium, and calcium. The nitrate of soda, sulphate of ammonia, phosphate of soda, nitrate of strontium, and the ammoniacal salt never acting but in a partial manner, probably in altering the fibrin.

So that the effect of the continued administration of alkaline salts is, first, to augment the fluidity of the blood, to diminish its plasticity, its coagulability, and to render its fibrin soft, its clot small and diffluent. Next after this, the blood takes on a veritable cachectic condition, generating a tendency to the eruption of putrid disease, as in constitutional scurvy. The urine flows clear and abundant; emaciation supervenes; then *marasmus*. The blood filters through the parietes of its containing vessels; serous accumulations follow; death ensues.

It is therefore a very great error, one indeed too often occurring in veterinary practice, to insist too much on the employment of alkalines. The facility with which they are obtained pure, and administered to sick animals, too frequently induces practitioners to persist in their use, even in cases wherein they are plainly interdicted, as in asthenic dropsies, cachexia, &c. If we desire to administer such for some days to bring on diuresis and alter the state of the blood, we ought not to delay to substitute other medicines for them, the moment the end we have had in view is accomplished. At such a time we should have recourse to sedative diuretics, and particularly to the balsams, which act potently on the urinary apparatus without affecting the constitution of the blood.

Journal de Médecine Vétérinaire de Lyon.

On the Influence of the Cutaneous Secretions on the Integrity of the General Functions of the Organism.

By M. H. Bouley,

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In all animals, from the exterior tegumentary surface incessantly exhales vaporous or gaseous matters, the products of chemical operations going on in the interior of the organism of which the

uninterrupted elimination is a necessary condition for the regular continuance of the general functions. Regarded in this point of view, the skin may be considered as a dependency of the respiratory apparatus, of which it continues and completes the function, by returning incessantly to the atmosphere the combusted products, which are water and carbonic acid.

Therefore the skin, properly speaking, is an expiratory apparatus which, under ordinary conditions of the organism, exhales in an *insensible manner* products analogous to those expired from the pulmonary surface; with this difference, that the quantity of carbonic acid is very much less considerable in the former than in the latter of these exhalations: according to Burdach, the proportion of carbonic acid as inhaled by the skin being to that expired by the lung as 350 : 23450, or as 1 : 67.

According to Sanctorius, who wrote at the commencement of the seventeenth century, up to our time physiologists and chemists have been at great pains to make a comparative estimate, by weight, of matters thrown off by the general transpiration (cutaneous and pulmonary); and their researches have shewn the quantity to be something considerable, since, according to the first of these experimenters, at the middle period of life, the transpiration of a man amounts to upwards of 5½ pounds in twenty-four hours*; and that out of every eight pounds of solid and liquid aliment taken in by a man daily, five pass off by transpiration and three only by the alvine and urinary excretions†.

But the cutaneous and pulmonary transpirations do not contribute in equal ratio to these enormous expenditures. According to Burdach, whose report is founded on Seguin's experiments, the first will be to the second as 14155 : 32241; that is, as 1 : 2·27‡.

So that the loss by the pulmonary surface is double what takes place through the tegumentary. On the other hand, the experiments of Treviranus, Spallanzani, and above all those of Milne Edwards, made upon small mammifera or on inferior animals, such as frogs, toads, salamanders, or fish, have demonstrated the waste by general transpiration to be, in twenty-four hours, little less than the half of the entire weight of the body§.

Without being strictly applicable to our domestic animals, on which the like experiments have not yet been made, these experimental results are, nevertheless, sufficient to convey a notion of the powerful action of the cutaneous secretions on the entire mass of the organism; and to forewarn us that there must exist similar

* Burdach, Traité de Physiologie, vol. vii, p. 354.
† Richerand and Berand, Nouveaux Elements de Physiologie, v. ii, p. 102.
‡ Berand, loc. cit. p. 302.
§ Burdach, loc. cit. p. 357.

expenditures in animals, such as the sheep, whose skin is kept continually moist by its thick woolly covering; or like the horse, that is kept for a length of time at rapid exercise, by which become so energetically acted on the operations of respiration and circulation, and, as a consequence, likewise the secretory functions of the skin.

But, in domestic animals, as yet no exact account has been kept of the amount by weight of matters cast off through the double transpiration by the skin and lungs, and the respective parts those two organs play in the restitution made continually by the system to the atmosphere; but, on the other hand, direct experiment has shewn, in the clearest manner, the close relation of function existing between the perspiratory and respiratory membranes.

It is to Dr. Fourcault that physiology is indebted for this admirable demonstration.

To give an idea of the labour of this able experimentalist, we cannot do better than extract from the Report of the Committee of the Prizes *Montgon* awarded in 1840, by the Academy of Sciences, the following succinct exposition:—

"M. Fourcault's labours," says the reporter of the Institute, "are divided into two parts:—1. Is a series of experiments made on different species of animals; 2. Consist of a series of pathological deductions endeavoured to be drawn by the author from them.

"M. Fourcault, with a view of observing through different species of animals the effects of the suppression of perspiration, conceived the notion of having the skins of certain live animals covered with varnish. After having been suitably prepared, some by being plucked, others by being shorn, he smeared them with varnish of variable composition; the substances employed being tar, paste, glue, pitch, and other plastic matters. Sometimes these, one or more of them, were spread upon parts, sometimes upon the whole of the body. The effects of the operation have varied, shewing themselves soon or late afterwards, decisively or otherwise, according as the varnishing has been complete or general, or only partial, thick, thin, &c. In every instance the health of the animal has undergone strange alterations, and life has been grievously compromised. Those that have been submitted to experiment under our eyes have succumbed in one, two, three days, and even at the expiration of some hours.

"In the opinion of the Committee, these experiments are full of warning. It is a fresh mode of inquiry into science introduced by M. Fourcault. The Committee have deemed it of consequence to make this public at once. Transferred to numberless other hands, to minds of varied character, and repeated in various places, the experiments of M. Fourcault cannot fail to cast new light upon

physiological and pathological phenomena originating in the double function of inhalation and exhalation of the cutaneous system."

M. Fourcault's experiments are no less novel than important. In signalizing them as such to experimentalists, the Academy will, we trust, be rendering a service to science.

These united considerations it is which, in the opinion of the Committee, justify voting for 2000 francs as honourable recompense to Dr. Fourcault.

A physiological fact of great consideration, and one that sets in conspicuous light one of the most important functions of the skin, is the *asphyxia* so surely induced by stopping up all the pores of this vast sieve (the skin), notwithstanding those of respiration are so widely opened that the freest passage is given to the air. Before, however, we consider this experimental fact in the manifold consequences deducible from it, we think it will be useful to place before our readers some observations through which they will quickly perceive the effects of complete or sudden suspension of these cutaneous exhalations on the general functions of the organism. The first we shall submit is a clinical observation.

General Burn of the Skin—Death on the Thirteenth Day—Autopsy.

A mare, through standing in a stable adjoining a building which caught fire, became enveloped in a volume of flame. A farrier, called to the case, covered the mare's skin from head to foot with poplar ointment. The next morning she was brought to the College.

THE STATE OF THE MARE ON HER ADMISSION was sadness and depression; eyelids tumefied, scorched, and half-closed; lips black and dry and chapped; skin burnt about the hind quarters, thighs, dugs, vulva, anus, tail, on each side of the belly, groins, flanks, and sides.

The case was considered as hopeless, not so much on account of the lesions received, as for the troubled functions necessarily consequent on such lesions.

Treatment.—A general soaping and washing ordered, to remove the grease with which she had been plastered, which by its presence obstructed parts of the skin untouched by the fire; after which Goulard lotion and cooling ointment were applied. In spite of all that could be done, however, the animal sank and died.

Death was not caused in this case exclusively by the suspension of the vaporous and gaseous perspiration over a great extent of cutaneous surface; no doubt other causes, such as injection from the purulent matter generated, and the exhaustion occasioned by

the many purulent discharges, contributed. But supposing that the action of the fire had been restricted to parching very extensively of the skin, we entertain no doubt but that this would have proved sufficient to destroy life, through *cutaneous asphyxia.* We will go further. We believe that, in such a case as this, the escharification of the skin had the effect of prolonging life so long as the thirteenth day; inasmuch as vast sheets of integument sloughed away in consequence of it, and so opened, so to speak, windows through which exhalation in some sort might go on. This accords with the experience of Fourcault, where it shews—a fact curious enough in appearance, though still susceptible of interpretation—that animals survive longer when they are completely deprived of their skin, than when one applies over the whole surface of it an impermeable plaster.

Some weeks after, we had a confirmation of this paradoxical fact. A horse was dragged out of the middle of a fire with a skin all over perfectly parched from the action of the flames. The following morning his respiration became so embarrassed, that M. Vatel, whose patient he was, believing there was an obstruction in the nasal passages, thought it his duty to perform tracheotomy. The operation turned out of no avail, notwithstanding it gave free passage of air in and out of the chest, and thus admitted of free respiration. The animal nevertheless died *asphyxiated*—asphyxiated through the skin.

The following are some of the experiments of Fourcault repeated, much abridged in report:—

First Experiment, 3d of Oct., 1847:—A mare ailing nothing save having canker, was closely shorn over every part of the body, mane and tail included, and the surface of the skin was afterwards covered with tar ointment. Some blood had been taken just before the inungation, with a view of ascertaining its appearance then, and learning what changes it would undergo.

From ten o'clock A.M., the hour at which the ointment was put on, until four o'clock P.M., no anormal sign presented, save extreme sensibility of skin to the touch.

At four o'clock there were partial muscular tremblings. Respiration slower by five or six per minute—pituitary, conjunctive, and buccal membranes, injected and turned violet—pulse full and strong—beatings of the heart energetic—appetite still good. In the night cough came on. At four o'clock, A.M., the animal is lain down upon his side in an almost complete state of immobility. Bid to rise up, he obeys with repugnance. His erect posture is unsteady. Motion difficult and vacillating, seeming as though he experienced great prostration of strength. The respiration slow and embarrassed, and accompanied by a blowing at the nostrils.

Pulse accelerated, but not so strong as last evening. Mucous membranes still violet-coloured. Appetite still good. Lest lying down might have rubbed off some of the ointment, a fresh coating of it was applied.

On the 8th of Oct. the respiration had become much embarrassed, though not increased in frequency. Serous discharge from the nostrils—mucous membranes highly injected—pulse quick, and rather feeble. The animal has much trouble to maintain herself erect, lying down almost constantly, evincing loss of strength.

9th.—We forced her to arise; but the muscular failing is so great, that this was done but with difficulty. Auscultation indicates one lung to be everywhere permeable, though the vesicular sound is very feeble.

10th.—To-day symptoms of colic; along with them, extreme difficulty of respiration.

11th.—Is down, and has not the power to rise. The mucous surfaces apparent are nearly black. Frothy discharge from the nose, the same as in asphyxia. Pulse hardly perceptible, and yet the appetite still remains. The animal eagerly seizes whatever food is placed before her, though she can hardly masticate it. Some symptoms of intestinal pain came on at intervals, and the animal died without a struggle on the 12th, at four A.M., lying upon her left side.

Autopsy, at ten o'clock.—Uniform black tinge of the blood wherever the knife cut. Deep red colour of the entire muscular system. Stomach filled with aliment almost dry. No secretion upon the mucous surface. With the exception of the dark hue the stagnation of blood had given to its membranes, the alimentary tube presented nothing anormal. Liver brown-black. Black blood in abundance wherever cut into. Spleen flattened and reduced. Kidneys deep-coloured, clots of black blood in their pelves.

Respiratory Apparatus.—Pituitary gorged with black blood, the same filling its sinuses. Blackish stain of the mucous surface, though that of the trachea was comparatively pale. *Lungs:* exterior, blackish green; interior, uniform black colour. *Heart:* coagulum, middle part white and black. Petechial spots underneath the endocardium. Deep red muscular tissue.

The analysis of the blood, drawn before and during the experiment, has not exhibited any material differences in composition. Here is the result:—

	Before.	After.
Water	82.41	81.85
Albumen	9.42	9.21
Globules	8.17	8.94
	10.00	10.00

THE VETERINARIAN, JUNE 1, 1850.

Ne quid falsi dicere audeat, ne quid veri non audeat.—Cicero.

The General Meeting of the Royal College of Veterinary Surgeons, as compared with past meetings of the kind, will stand chronicled in our pages for the largeness of the number present, for the absence of that clamorous and querulous debate which has been any thing but agreeable or creditable to us on former occasions, for the absence of the President, and for an evident change, if not in opinion, at least in the preponderance of party. The number of members present our reporter states to have been "between sixty and seventy:" we believe sixty-five to be the precise number. The meeting was, certainly, of a highly respectable character; and we were glad to see present most of the old and more influential members of the veterinary profession resident in and near the metropolis, together with a fair sprinkling out of the country. The indisposition of the President—Mr. Thomas Turner—was a theme of universal regret. From the circumstance of no one but himself having as yet occupied the chair; from his unwearied attention to his duties as Chairman, as well at Council as at General Meetings; and from all that he is remembered to have done in obtaining the Charter and giving operation and efficiency to it, the absence of Mr. Turner on this important occasion, and particularly when the cause of such absence came to be known, was by all present very much lamented. Inquiries concerning his health were many and anxious of his brother and son, who were both present at the Meeting, and who reported so favourably of it that the feeling of regret gave way rapidly to an expression of joy at the hope of seeing our friend shortly again in his place.

Before what we are now writing will appear in public the Council will have holden their meeting for the annual election of President. Our Charter has vested this privilege in the Council which other charters direct to be determined by the suffrage of the profession at large. We are not going here to inquire which of the two is the more eligible mode of election. All that we shall say on the matter is, that in our own mind we have always deemed it imperative on the electors to take their President from among the *elders*, the best informed and most respected of their professional body; and that, though there may exist reasons for occasional deviation from this patent, straightforward, and, as it would to us appear, dutiful rule of procedure, yet, ought such reasons be

shewn to be of a nature to make it quite evident that nothing short of distinguished services or commanding talent on the part of the elected, or the warmest sense of gratitude or obligation on the part of the electors, would have set honoured and honourable grey hairs aside to make room for their juniors. Persons in years are doubly gratified at being clothed in honours: they are pleased at having to fulfil the duties of stations of rank and power; they are gratified at the remembrance of having performed them, and with the name they have derived from those performances;—a name that does not descend and die with them in the tomb, but lives for ages after they are gone in the memories of their professional brotherhood.

Virulence of party at the late meeting seemed to be subsiding into a general feeling and desire for an adjustment of differences. This, and this alone, it is that, while it affords additional support to the Charter, can mend the gaps in our lacerated profession. It is quite certain we can no longer go on without the Charter; and it is equally certain that, until all parties concur in its maintenance, there can be no intestine peace and harmony among us. Fairly and honestly carried out, and worked by the united force of the entire professional body, there can be in no unbiassed mind a shadow of a doubt but that whatever may be wanting to complete the Charter—to make it perfect and *useful* to us—will in time be added to it. In its representative character our Charter is framed upon the most admired of principles,—a principle the envy of all who possess charters of another description; nor has the detail through which that principle is worked out any thing in it which any branch or department of our profession have right or reason to find fault with. We, therefore, hope and trust that the present glimmerings of amicable understanding and arrangement may not die away, but may burn brighter and brighter until the meetings both of Council and general body shall, by their united labours, cast lights over the veterinary world no less creditable to ourselves than acceptable to the public at large.

Mr. Cherry, in his reply to Captain Hely in our present Number—which, in order that we may do the production full justice, we print *entire*—is offended with us for having last month designated his letter in our April Number an "attack;" and for having added, that the alleged attack was as "unprovoked as undeserved." We hope on the present occasion to shew—in language of a different character from that which Mr. Cherry has thought proper to make use of—that the letter referred to, to give

it a mild appellation, *is* an "attack," and an attack which has been neither "provoked" nor "deserved."

That the letter in question amounts to an *attack*, and an offensive one too, the bare perusal of it will satisfy anybody save Mr. Cherry "and his partizans." Indeed, could there by any possibility, after reading it, exist a doubt as to its character and tendency, Mr. Cherry himself, in the letter of his we this month publish, has cleared it up, by admitting that his former letter is seasoned "with *sarcasm* and *irony*;" and this was done, he informs us, "to induce a reply." So that the simple circumstance of Mr. Gloag's *not* replying to his letter was, in Mr. Cherry's mind, a sufficient provocation for "sarcasm and irony."

But Mr. Cherry, though he disclaims his letter being an "attack," protests that—whatever he may call it—it was both "provoked" and "deserved." Provoked by what, we ask? Mr. Cherry answers—"By Mr. Gloag *and his partizans* endeavouring to FORCE experiments and opinions, *conceived without judgment*, and *conducted without skill*." What! and is this the return Mr. Gloag is to receive for the labour and time, and anxious thought and reflexion, bestowed upon experiments made in hopeful elucidation of one of the most important and mysterious, and at present debated, points in the physiology of the foot of the horse?—Experiments, in replying to which, Mr. Reeve, Mr. Gloag's opponent in opinion, has commended their author, by saying—"Were it necessary, I would allude to the credit due to that gentleman (Mr. Gloag) for industry and perseverance, in endeavouring to elucidate a subject which seems to have appeared both difficult and novel to the experimentalist; but this has been so generally accorded by the profession at large, individual panegyric would appear superfluous*;"—experiments which Mr. Ernes, of Dockhead—certainly, for an opinion, one of the soundest men we have in the veterinary profession—has pronounced to be both "able and well conducted," in comparison with which his own (experiments made some years ago for a similar purpose) are "only trifles†." After such testimonials in favour of his labours as these, and in the face of the accredited reputation Mr. Gloag for twenty years has enjoyed as an Army Veterinary Surgeon, are we to be told that his experiments are but "a *farrago* of pseudo-experiments?"—"conceived without judgment?"—"conducted without skill?" Why, this is monstrous! If men, pursuing scientific researches, are to be run down after such a fashion as this, not an individual in our or in any other profession is out of the reach of "sarcasm and irony." We must all of us, save Mr. Cherry, be set down as dolts and blockheads.

* VETERINARIAN for February 1850, page 61.
† Ibid for April 1850, page 202.

Then again, concerning the nature and objects of the experiments, and the methods of conducting them—eleven of them out of the twenty-four, says Mr. Cherry, were "performed on *dead* feet," and they were "*squeezed in a vice.*" And where is such impropriety or unscientific procedure in this that Mr. Gloag is to be taunted and held up to ridicule for it? Has not human physiology—ay! and veterinary too—obtained some of its most valuable facts and brilliant illustrations from experiments on *dead* parts? How was it, but through such means, that tendons came to be ascertained to be inelastic cords, and to be physically stronger than the muscles to which they respectively belong? Were the tendons not first dissected out of the body to undergo (like the foot in the vice) the mechanical trial of having weights fastened to them? Elasticity is a property of inanimate as well as animate bodies, and needs not vitality for its demonstration. It is neither dependent upon nor anywise influenced by the vital force. Mr. Gloag well enough knew this; and, among other experiments, found it expedient to place the foot in a vice, and to "squeeze" it, in order that he might leave no mechanical force untried to elicit its elastic properties: so difficult was the problem he was engaged in endeavouring to solve,—the expansibility of the horse's foot.

But, no more! We feel—we hope, at least—we have said enough to make it quite evident that Mr. Gloag, for his paper of "Experiments on the Expansion of the Horse's Foot," published in THE VETERINARIAN for May, June, and July 1849, has deserved at the hands of the profession treatment very different from the "sarcasm and irony" administered to him by Mr. Cherry. We entreat our reader to take the trouble to peruse Mr. Cherry's two letters. The first will be found in THE VETERINARIAN for October 1849, at page 571; the second in the Number for April last, page 204. The perusal we beg of him to make will take up but little of his time, and will so far put him in possession of the bearings of the question as to enable him to decide who is right and who is wrong in the matter.

For our own part, notwithstanding we have not, in the letters referred to, escaped Mr. Cherry's kind remembrances, we have in this article contented ourselves, in return, with plain and truthful statements. Our weapons have been arguments, not words, we being quite content to let the affair rest upon its own merits.

Mr. Gloag, much to his credit and praise, has refrained from entering into contention. And as for Captain Hely, since he merely stepped forward in defence of Mr. Gloag, he is altogether out of the *professional* controversy: the letter containing the "sarcasm and irony" having been published *a month antecedent to his entering the field.*

Here the matter must end. We cannot insert any more communications.

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CONTRIBUTIONS TO THE PATHOLOGY AND PRACTICE OF VETERINARY MEDICINE.

By W. HAYCOCK, *Veterinary Surgeon,*

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SEVENTH CONTRIBUTION.

Puerperal Fever.

CASE I.

April 26th, 1843.—WAS requested, about three o'clock P.M., to attend upon a cow, the property of an individual residing in Huddersfield.

History, &c.—The cow is of the Devonshire breed, and is in excellent condition. On the 23d of the present month she calved her third calf, and the parturient process was gone through without any difficulty. From the time of the animal calving, until this morning, she has yielded her milk freely, fed well, and ruminated regularly; her diet has consisted of boiled oats, bran, and hay; her drink of chilled water, with an occasional allowance of gruel, sweetened with treacle. This morning, the cow was attacked with a slight shivering fit, which however quickly subsided; after which she remained restless, and appeared as though affected with a general uneasiness; her breathing became a little quickened; she refused her food; did not ruminate; and parted, occasionally, with small portions of dung. The owner bled the animal to the amount of four quarts; and, afterwards, administered to her a pound of butter dissolved in some oatmeal gruel; during the day she laid her down once or twice, but quickly rose again; the last time she arose she exhibited symptoms of weakness in her hind limbs; she placed them wider apart than usual; her body was slowly swayed from side to side, until, at last, she fell with some degree of violence upon the ground; after which I was immediately requested to attend.

Present State :—

1. Pulse so feeble and indistinct that I cannot number it for certain ; but it appears to beat about 96 per minute.

2. The respirations are 48 per minute, and exceedingly laborious.

3. The breathing is carried on principally by the air passing through the mouth ; which cavity is filled, or nearly so, with a thick tenacious froth.

4. Every time the act of expiration is performed it is attended with a loud blowing or bubbling kind of noise.

5. The eyes exhibit a dull leaden-like hue.

6. The pupils of the eyes are largely dilated, and the eyes themselves are all but totally insensible to the action of light.

7. The tears are plentifully secreted, and roll in large drops down the cheeks.

8. The nose is moist, the horns are cold, and the extremities are of a variable temperature.

9. The cow is laid on her left side upon the ground, with the head considerably lower than the hind extremities.

10. Sometimes her head is laid close to her right side, while at other times she tosses it wildly about.

11. She struggles severely, as though suffering from acute abdominal pain, and occasionally she attempts to roll over.

12. In attempting to give the animal a small quantity of medicine, I found that the power of deglutition was gone.

I immediately raised the fore-quarters of the animal ; but, notwithstanding every thing I could do (which was but little), the cow died about thirty minutes after my arrival.

Examination two hours after Death. State of the Digestive Organs.—The paunch, maniplus, and the abomasum, were normal in their structures; but all of them were excessively filled with food ; particularly the paunch, which was crammed to excess. The food itself was of proper consistence, and appeared as though the function of digestion had been but little, if any, interfered with. The small intestines, in two or three places, exhibited a number of minute dark spots, which I did not think arose from any inflammatory action. The large intestines were normal throughout.

Respiratory Organs.—The trachea contained a portion of frothy spume ; the lungs were exceedingly bulky from excessive congestion. The congested blood was black, and tar-like in appearance. The pleura was healthy, but the cavity of the chest contained ten or twelve ounces of serum.

Organs of Circulation.—The auricles and ventricles of the heart

were filled with the black semi-coagulated blood, such as I have alluded to as existing in the lungs; but the heart and vessels were healthy.

Nervous System, &c.—The membranes adherent to the brain and spinal cord were firm in their textures, but the bloodvessels of these structures were much congested upon the whole; the nervous tissue itself was moderately firm, and its colour clear; about two drachms of clear-coloured serum were present at the base of the brain; much the same conditions were presented by the spinal marrow and its coverings. The muscles of animal life, the urinary organs, and the genital organs, I carefully examined, and found them proper throughout.

Case II.

July 8th, 1842.—Was requested, about six o'clock A.M., to attend upon a cow, the property of an individual residing about three miles from Huddersfield.

History, &c.—The cow in question is of the short-horn breed, in good condition, and a free milker. On the evening of the 6th, she calved her fourth calf. The parturient process was difficult and tedious. The cow was noticed to be a little off her feed last night, but the matter was not heeded at the time; this morning she was found laid upon the ground, exhibiting symptoms of acute pain, upon which a messenger was despatched, in great haste, requesting my immediate attendance.

Present Symptoms.

1. Pulse 92 per minute.
2. Respirations 44 per minute, and panting in character.
3. The cow is laid upon her right side, fully extended in the stall.
4. The surface of her body generally is cold.
5. The lachrymal glands secrete tears in great abundance.
6. The eyes are insensible to the action of light, or nearly so.
7. Occasionally, she struggles violently with the hind limbs; she also gives utterance to loud moans.
8. The udder is hard, and does not yield any milk.
9. Sometimes the head is suddenly jerked from the ground, brought hastily round to the left side, then moved slowly back, and falls heavily upon the ground.
10. She does not appear to have dunged or urinated for a considerable time.
11. The pudenda are considerably swollen, and the mucous membrane of the vagina is of a dull purple colour.

Treatment.—Various remedial measures were had recourse to, but without any permanent benefit. The rectum and the bladder were emptied of their contents, stimulants and antispasmodics were given her, but without avail. The cow died about eight o'clock in the evening of the same day.

Examination fourteen hours after Death. Digestive Organs.—The stomachs were healthy; the food in the maniplus, in some parts, was becoming very dry; the paunch contained a large quantity of food. The peritoneum, throughout, presented indubitable evidence of inflammatory action; patches of a dull purple colour were present upon the membrane investing both the small and the large intestines. Some murky-looking serum was present also in the abdominal cavity, in which floated shreds of dirty coloured lymph.

Organs of the Chest.—The lungs were healthy, but considerably congested; the heart was firm in its structure, and both its ventricles were filled with black blood firmly coagulated.

Organs of Generation.—The uterus presented clear proof of inflammatory action; over the whole of its mucous membrane were large patches of a dark purple colour, eight or ten inches in length, and six or eight inches in breadth; these patches of purple in some places presented darker shades of colour, becoming, in fact, almost black; most of the patches were connected one with another by a continuous faint purple tinge; the mucous membrane (particularly where it was darkest) readily peeled away from the subjacent textures; while over the whole membrane was spread a kind of yeasty looking fluid, which emitted a disagreeable odour. Patches of colour of a dull faint red tinge were also present over the abdominal surface of the uterus, some of which appeared to be in connexion with the patches described as peculiar to its mucous surface, while others, again, did not present any such connexion; the substance of muscular tissue of the organ was moderately firm.

Nervous System.—The nervous mass composing the brain was moderately firm; the same also with respect to the nervous mass composing the spinal cord. The serous membranes investing these organs were firm in themselves, and their vessels were not abnormally congested, for I examined the parts from the brain to the end of the spine.

Case III.

May 16th, 1843.—Was requested, about two o'clock P.M., to attend upon a cow, the property of a cottager residing near Huddersfield.

History, &c.—The cow is a mongrel-bred one, and small in size; she has belonged to her present owner more than two years; and, during the last eight months he has thought, at times, that the cow

"lost flesh," and her appetite, he has frequently observed, was not so good as he could desire; nevertheless she yielded milk copiously at all times. Last night, about six o'clock, she calved her fifth calf, which process was gone through without much difficulty. This morning she did not give quite so much milk as was expected, neither did she eat the whole of the food offered to her; but the latter being a matter of common occurrence it was not regarded at the time. About an hour ago she manifested symptoms of illness, and became exceedingly weak; her breathing became hurried, and her head was held low. A cowleech, resident in the neighbourhood, was called to her: he urged the owner, strongly, to have the animal bled, to which he would not give consent until he had heard whether my opinion was favourable to it or not; and a messenger was accordingly despatched to request my attendance.

Present Symptoms.

1. Pulse 88 per minute, and feeble.
2. Respirations 46 per minute, and panting.
3. The cow is laid upon her left side, her neck and head in a line with her back, and the chin resting upon the ground.
4. The eyes present a dull glassy-like appearance.
5. The surface of the body, generally, is extremely hot.
6. Three of the limbs are hot, the fourth is of a normal heat.
7. The nose is hot and dry.
8. The udder is not hard, but the milk is not yielded in any particular quantity.
9. A portion of the placenta is hanging from the vagina.
10. At times the cow appears better for a short period; the breathing becomes less hurried, and the eyes look brighter.
11. She dunged and urinated freely a short time before the present symptoms supervened.

Treatment.—To have a light rug thrown over the animal's body; the milk to be frequently stripped from the udder.

℞ Antim. tart ..... ʒj
Potass nitratis ..... ʒjss.

To be given immediately in a pint of thin gruel, and to be repeated in four hours.

Eight o'clock, P.M.—During the last six hours the cow has varied, at times, considerably. On two occasions she fell very much away; the breathing became more quick and panting; the temperature of the body increased, attended with rising of the pulse; at one time the pulse was nearly 100 per minute; she uttered low moans, threw her head about, and presented a very sickly languid look. These states of increased fever lasted about an hour each

time; the remaining periods she was comparatively easy. At present no great improvement is visible. The medicine to be repeated in two hours, with the addition of spts. of nitre ℥ij; then to be repeated again at two o'clock A.M.; to have also some chilled water or thin gruel given to her; the udder to be stripped as usual, and the cow occasionally turned over, and her limbs well hand-rubbed.

17*th*. *Eight o'clock*, A.M.—Upon arriving at the residence of the owner of the cow, I was very much surprised to learn that the animal had died about three o'clock this morning. I was told that shortly after two o'clock she was attacked with a relapse; that those in attendance upon her left the cow for a short time, for the purpose of obtaining some refreshment, and that upon entering the place again they found that she had died.

Examination eight hours after Death. Digestive Organs.—A large quantity of gas escaped when the intestines were cut open, but the digestive organs themselves were in a very sound state throughout; the food which they contained was soft or pultaceous, generally; the paunch was moderately filled, and the maniplus also; some portions of the food in the latter organ were drier than others; the drier portions were principally in connexion with the central folds of the organ.

Organs of the Chest.—Upon opening the chest, it was at once apparent that the lungs were very extensively diseased, for nearly every part of these important organs was tuberculated. I cut away two masses of lung, each the size of a brick, and almost as hard from the accumulated presence of dry tuberculous matter. The matter itself was of a brightish yellow colour, and very closely resembled decayed cheese; it emitted scarcely any odour; some portions were extremely soft, others hard, dry, and somewhat chalky. It was also impacted in masses, each mass being contained in a kind of cavity, and these cavities, many of them, communicated one with another. Those portions of the lungs free from the tuberculous deposits were intensely congested with black blood. The pleura was healthy; the heart was small in size, and its substance did not present any strong degree of tonicity; all its cavities were filled with black blood in a semi-coagulated state.

Nervous System.—The membranes investing the brain were moderately firm, but considerably congested. A quantity of serum existed at the base of the brain, immediately under and around the base or roots of the optic nerves; the substance of the brain was moderately firm, but the colour of the cortical and medullary portions was not so clear as I have seen in other specimens. The spinal cord I examined throughout its whole length, and its investing membranes were similarly congested to those of the brain; the

membranes themselves were moderately firm, but the effusion of serum was considerable: the whole length of the nervous tissue of the marrow was moderately firm.

Case IV.

December 28th, 1844.—Was requested, about five o'clock P.M., to attend upon a cow, the property of a gentleman residing in Huddersfield.

History, &c.—The cow I am called to calved yesterday in the forenoon, about ten o'clock; the parturient process was not a severe one, nor yet was it prolonged. The gentleman has owned the cow about two years, during which period she was never known to ail any thing. She presented symptoms of being unwell about half an hour ago, and I was immediately requested to attend.

Present Symptoms.

1. Pulse 64 per minute, and feeble.
2. Respirations 26 per minute.
3. The cow is standing, but her limbs appear very weak; the body is slowly swayed from side to side.
4. The head is carried low, with the nose near to the ground.
5. The horns are hot; mouth moist, and the nose dry.
6. She grinds her teeth constantly.
7. She is cold along the course of the spine; this coldness is most intense across the lumbar region.
8. The eyes are dim and glassy-looking.
9. The udder is very large, very hard, and yields but little milk.
10. The placenta is hanging from the vagina, and emits a bad odour.
11. The surface of the body is hot, but the limbs are of a variable temperature.
12. During the last two hours the cow has frequently parted with small portions of dung.

Treatment.—I had the animal well bedded with clean straw; a woollen rug thrown over the body; the placenta was removed, and the course of the spine was well stimulated with a strong liniment, composed of turpentine, ammonia, and spirits of camphor; after which I administered the following in a drench:—

℞	Antim. tart.	ʒj
	Camphor	ʒj
	Potass nitratis	ʒij
	Spts. nitre	ʒij
	Oatmeal gruel	a pint

In giving the medicine the cow dropped upon the ground somewhat heavily, where she lay for about an hour; at the end of which time she rose again upon her feet, but shortly fell a second time, to all appearance exhausted.

Eight o'clock, P.M.—During the last three hours the cow has varied considerably; the breathing, at times, would become much quickened; the surface of the body very hot; the pulse greatly heightened; the eye more dim and lustreless; the head was brought to her side, and, occasionally, she would give utterance to low moans. Such fits generally continued about a quarter of an hour each time; all the symptoms would then gradually subside, the body become cooler, the head would be held up, and the eye present a cheerful appearance. At ten o'clock to have the following in a draught:—

℞ Antim. tart. ..... ℥j
Camphor ..... ℥j
Spts. of nitre ..... ʒj
Thin gruel ..... a pint

29*th*, *Eight o'clock*, A.M.—The cow is laid, apparently helpless; the head is brought to the side; the horns are cold; the limbs are hot and cold in patches; the eyes have a blue green-like look, and if I draw my finger over the cornea the eyelids do not close; the sense of vision is gone; the mouth is moist, and the nose dewy; the pulse is 60, and rounder than last night, and the respirations are 24 per minute; the udder is softer, and more milk is yielded; she has dunged once during the night, and urinated freely; the breath emits a bad odour. To have half a pint of brandy in a quart of thin gruel immediately.

Six o'clock, P.M.—About an hour after the brandy was given, the animal exhibited symptoms of amendment; at twelve o'clock she was holding up her head and looking well, comparatively speaking; about three o'clock she dunged and urinated freely, and shortly afterwards a relapse supervened; but when I arrived this evening at the hour stated, the sense of vision had fully returned; in addition to which, she had turned herself over as she lay. The respirations are now 18 per minute, and the pulse much the same as in the morning; the temperature of the body and limbs is more natural than I have previously observed. To have the following in a pint of thin gruel:—

℞ Camphor .. .. ℥j
Spts. nitre ..... ℥ij

Ten o'clock, P.M.—Better, considerably; she holds up her head, and looks about her; she has again turned herself over, and again dunged and urinated; yields more milk; drinks freely of chilled water, and has made attempts to rise upon her feet. To have a

small portion of bran-mash given to her, if she will take it; also some gruel containing a free allowance of treacle; also to be kept warm, and repeatedly milked during the night.

30*th*, *Nine o'clock* A.M. — This morning I found my patient upon her feet, but evidently in a very weak, tottering condition: she moves her limbs as though she controlled them but partially. The milk is yielded freely, and the udder is soft; her appetite is very poor indeed; she dungs and urinates freely, and she drinks her gruel very well. To be fed upon mash and boiled corn for a few days; her limbs to be repeatedly hand-rubbed, and her body covered with a dry rug. The day following the animal was still more improved, so much so, indeed, that I did not consider any further attendance necessary.

Case V.

May 8*th*, 1846.—Was requested, about ten o'clock A.M., to attend upon a cow, the property of a gentleman named Brook, residing at Marsh, situated about a mile westward of Huddersfield.

History, &c.—The cow I am requested to see is of the short-horn breed, and of a spare conformation. She calved yesterday at noon, her fifth calf, and the parturient process was gone through without any difficulty; she continued to yield her milk freely, and to eat her food with zest until this morning, when she was found to fail in both particulars. A short time ago she exhibited symptoms of weakness in her hind limbs; "her body," said the owner, "had a swinging motion; her legs trembled, and she soon afterwards fell with violence upon the ground."

Present State.

1. Pulse 64 per minute, soft and round.
2. Respirations 15 per minute.
3. The animal is laid upon her left side; she holds up her head, and presents what to an ordinary observer would appear a cheerful aspect; a closer inspection, however, detects a peculiar glassiness of the eyes.
4. The surface of the body is cool, the nose is moist, and the mouth is also most.
5. She occasionally attempts to rise upon her feet, but the hind limbs are powerless; she manages, however, to drag herself forward upon her knees.
6. The udder is a little harder than natural, and the milk is freely yielded.
7. Occasionally she grinds her teeth, and gives utterance to low moans.
8. She has not dunged or urinated since early this morning.

Treatment.—To have the following immediately in a pint of warm water:—

℞ Antim. tart ..... ℥j
Camphor ..... ℥j
Spts. nitre ..... ℥ij;

the course of the spine to be also stimulated with a strong irritating liniment; the body to be covered with a light rug, and the udder to be frequently stripped of its contents.

Six o'clock, P.M.—Somewhat worse; the nose is resting upon the ground: surface of the body very hot; three of the limbs hot and the fourth cold; nose hot and dry; moans louder, and breathes more rapidly; she also grinds her teeth more frequently; eyes more glassy: she has drunk twice of gruel, dunged once, and urinated freely.

℞ Sulphate of magnesia ..... ℥viij
Antim. tart. ..... ℥iij
Potass. nitratis ..... ℥vj

To be divided into three doses—one to be given immediately in a quart of thin gruel; doses two and three to be given every five hours in the same way. The course of the spine to be again freely stimulated, and the limbs to be well hand-rubbed.

9*th*, *Eight o'clock*, A.M.—During the night the cow had two relapses, such as I have described above. This morning, however, she is better; she has dunged twice and urinated twice since I saw her last night; she has also made several attempts to rise, but without avail: the milk is yielded more freely, and she has drunk freely of gruel. To have the following at twelve o'clock:—

℞ Antim. tart ..... ℥j
Potass. nitratis ..... ℥ij
Magnesiæ sulph ..... ℥ij
Warm gruel ..... a pint

Seven o'clock, P.M.—The cow has had one relapse since morning; she is not so well at present; she grinds her teeth, looks anxious and heated; the horns are very hot, and the nose dry; she has dunged once since noon, and urinated also; has made several attempts to rise, but still unable to do so. Repeat medicine, and again stimulate the course of the spine.

10*th*, *Nine o'clock*, A.M.—This morning I find my patient standing upon her feet and chewing her cud; she managed to rise about five hours ago: at present she is very weak and tottering in her hind limbs; the bowels are very gently operated upon. The cow to be fed upon boiled oats, bran, and boiled linseed or boiled barley, and occasionally a small portion of hay. I saw the animal again the day following, when I found her perfectly recovered, save from the effect of a little debility.

Case VI.

June 20th, 1843, was requested, about nine o'clock A.M., to attend upon a cow, the property of a widow lady in this town.

History, &c.—The cow in question was bred in the neighbourhood; she is of the short-horned breed, of very spare conformation, and a copious yielder of milk and butter. Yesterday morning, about ten o'clock, she calved her sixth calf. The parturient process was a little difficult, and ever since, the cow, I understand, has exhibited symptoms of weakness in her hind limbs; nevertheless, she has fed well, ruminated regularly, and, in short, has appeared to do well in every other respect. About half an hour ago she began to stagger very much, and soon afterwards she fell, with some degree of violence, upon the ground; after which she made several attempts to regain her feet, but was unable to do so: I was then requested to attend.

Present State.

1. Pulse normal, and respirations 16 per minute.
2. She is laid upon her left side; she holds up her head, and looks cheerful.
3. The eyes are bright; the nose and mouth moist.
4. The limbs and the surface of the body are of a normal temperature.
5. The udder is soft, and the milk is yielded freely.
6. Occasionally she makes desperate attempts to rise upon her feet, but the hind limbs are utterly powerless.
7. She will eat heartily, drink freely, and she dungs and urinates regularly.

Treatment.—To be kept as quiet as possible, and a portion of the following mixture to be freely applied to the course of the spine every four hours; the body, afterwards, to be covered with a light rug, and the animal fed as usual.

℞ Ammoniæ..... ℥ij
Spts. turpentine..... ℥ij
Spts. nitre ..... ℥ij
Olive oil ..... ℥ij

The cow remained in the above described state for several days; at times she made very strenuous exertions to rise upon her feet, but was unable to do so until the 27th. On the second day after she fell ill the stimulating liniment was discontinued, on account of its producing great soreness of the skin. She regularly turned herself over as she lay; her digestive organs continued healthy;

she ate well, drank well, and yielded an abundance of milk. I did not give her any medicine during the whole time. On the evening of the 27th she managed to get up, and some days afterwards she was perfectly recovered.

Case VII.

February 15th, 1849.—Was requested about four o'clock P.M. to attend upon a cow, the property of a cottager who resides about four miles from Huddersfield.

History, &c.—The cow is of the short-horned breed, red and white in colour, and she has been the property of her present owner about eighteen months. About five months ago she was affected with a difficulty of breathing, attended with cough. She was placed under the care of a cowleech who resided in the district, and who gave her some medicine on two or three occasions, after which she ultimately recovered, and continued to do well until to-day. Yesterday, between three and four o'clock, she calved her fifth calf; and the parturient process was easily gone through; after which she fed well, yielded her milk freely, and was regular in other respects. About one o'clock to-day, the owner thought he perceived a change in the animal—she refused her food and her gruel, became dull and listless. About three o'clock she became so much worse, that a messenger was despatched to request my immediate attendance.

Present State.

1. Pulse 72 per minute; and respirations 26 ditto.
2. The animal is laid prostrate upon her right side.
3. The general surface of the body is hot; the ears and horns are also hot; and the nose is dry.
4. The abdomen appears very full, but it exhibits no tenderness when pressed upon.
5. The eyes present the glassy aspect so common in these cases; the mucous membranes of these organs is also much injected.
6. The udder is large, hot, and hard, and yields but little milk.
7. She has not dunged nor urinated for some hours.

Treatment &c.—The body of the animal to be covered with a woollen rug; the course of the spine to be strongly stimulated; the rectum and the bladder to be emptied of their contents; and to have the following in a draught immediately:—

℞ Antim tart..... ℥j
Potass nitratis ..... ℥ij
Aloes Barb..... ℥iv
Magnesiæ sulph..... ℨij
Thin gruel ..... a quart.

Eleven o'clock, P.M.—During the last three or four hours the cow has varied very considerably—at one time a little better, and at another time much worse. The relapses have been very severe. She is now in a state of relapse; the respirations are 39 per minute, and the pulse 96 per minute; the eyes are also more insensible to light, and the abdomen has become more tense. The course of the spine to be well fomented with large woollen cloths soaked in hot water; the udder to be frequently stripped of its contents; the cow to be turned over upon her other side. To have the following immediately, and, if not better in four hours, to have it repeated:—

℞ Ammoniæ ..... ʒiss
Spt. nitri ..... ℥ij
Aquæ ..... ʒviij

16*th*, *Seven o'clock*, A.M.—Worse than ever, and, from what I am told, must have gradually continued to become so during the last five or six hours. The horns and limbs are deathly cold; surface of the body more regular; the pupil of the eye is largely dilated, and the organ is insensible to light. If I draw my finger over the cornea, the eyelids remain open. Pulse about 104 per minute, and respirations 60 per minute. The mouth is filled with a thick tenacious kind of mucus, and every time the act of expiration takes place it is attended with a loud bubbling sort of a noise: she has also lost the power of deglutition. She died about nine o'clock A.M.

Examination two hours after death. Digestive Organs.—The various stomachs were all perfectly healthy, and their contents natural; the paunch and the maniplus were very full of food, particularly the paunch, the contents of which were of a semifluid nature. The food in the maniplus was soft generally, particularly between the outer layers of the organ; between the central layers the food was considerably drier. The small and large intestines were perfectly healthy in every respect; the peritoneum was also perfectly healthy in every part.

Uterus.—The muscular substance of the uterus was firm throughout; the colour of its mucous membrane was normal, but it was easily detached from the subtextures: every other structure peculiar to the organ was healthy.

Urinary Organs.—The bladder contained a moderate quantity of high-coloured urine; it was normal, as also were the kidneys, ureters, vagina, &c.

Organs of the Chest.—A portion of the right lung was adherent to the pleura; the adhesion was about nine inches in length and about seven inches in depth. On separating this adherent portion, I found it was not only impervious to air, but that it also contained a large cavity, which was filled with tuberculous matter. This

matter was of a straw colour, and closely resembled old cheese. Intermixed with this substance were small portions of substance of a light pea-green colour. One or two smaller cavities were contiguous to the large one, which also contained the tuberculous deposit. Some straw-coloured lymph was also present in the bronchial tubes leading to these cavities, and it was by a similar deposit of straw-coloured lymph that the lung was retained to the pleura. I removed at least eight or ten ounces of this substance from the surface of the pleura; but the pleura itself did not present the least change in any part: it was not injected, nor rough, nor thickened in any way. Every other portion of the lungs was perfectly normal.

Nervous Centres.—I carefully opened the cranium, and the whole of the vertebral column: the membranes of the brain were intensely congested; so much so, indeed, that when the brain was held out at arm's length, the organ appeared as though it had been painted with black paint. Between the pia-mater and the brain a layer of serum was deposited—a deposit of serum also existed between the cranium and the membrane below it, also at the base of the brain: here, however, it was not very considerable. *The whole of the membranes separated with the greatest ease from one another, and from the brain itself. I passed my index finger under the pia-mater, and the slightest force sufficed to make it peel away: the membranes were more like wet paper than fibrous tissues.* The lateral ventricles of the brain were also filled with serum, and the plexus choroides were intensely congested and much softened; *the colour of the brain when the serum was washed away was remarkably clear and good, and its structure was firm and normal in every respect.* The whole of the membranes investing the spinal marrow were also intensely congested, particularly from the bottom of the cervical vertebræ to the end of the lumbar region: *a deposit of serum existed the whole length of the spinal marrow, i. e. between it and the membrane immediately surrounding it. The spinal marrow itself was of good colour, and very firm in its substance.*

Circulatory Organs, &c.—The heart and the large vessels, including the arteries and veins, were perfectly healthy, as also were the muscles of animal life.

Remarks.—In sending forth this contribution, I may remark, that I have perhaps little, if any thing, of interest, to offer respecting puerperal diseases, i. e. so far as those diseases are limited to the various forms of fever which the parturient process is apt to produce. I possess, however, memoranda, and full records of a number of cases which, from time to time, have come under my care, some of which I now present to the reader. It is more than probable

that I should never have given these cases to the world, had I not seen the question mooted by that excellent and indefatigable labourer, Mr. Cartwright, in THE VETERINARIAN for May of the present year. In looking over THE VETERINARIAN for 1844, the reader will find a very excellent paper upon "*Puerperal Fever*," by Mr. Barlow,—a paper which I consider well worth the perusal of every veterinary surgeon. In this paper the author has displayed a clearness of perception with respect to the pathological bearings of puerperal fever upon physiology, as to render it worthy of a high standing in our veterinary literature. I do not subscribe to every opinion advanced in it by Mr. Barlow; but, as a whole, I consider it highly valuable to the student, and creditable to the writer. The cases I have detailed afford, perhaps, a fair general view of the forms or conditions under which puerperal fever is presented to the veterinary practitioner.

Cases 1, 2, 3, 4, 5, and 7, present, at their commencement, many symptoms in common; but the parts affected in Case 2 were found after death to be very different from those in Cases 3 and 7 respectively. The *immediate* cause of the animal's death in Case 1 was congestion of the lungs; the cow fell upon the ground, and, from the character of the ground where she lay, her hind parts were so elevated as to throw the whole weight of the bowels and heavily filled stomachs upon the diaphragm; from which circumstance the cow was unable to breathe, and congestion of the lungs and death, as a matter of course, rapidly supervened. This, I am of opinion, is no uncommon mode in which the disease terminates: cows begin and die, as it were, at once; and, if I mistake not, through congestion of the respiratory organs, induced by the great weight of the substances contained principally in the paunch, which, lying upon the diaphragm, its thoracic surface becomes not only convex, but powerless, thus rendering pneumonic hyperæmia and death inevitable.

Case 2 is interesting, as shewing that, notwithstanding all that may be urged in favour of puerperal fever being entirely confined to the nervous centres, occasionally acute inflammation of the peritoneum and uterus is present, and constitutes the disease with which the veterinarian has to grapple. The general symptoms of the patient, in this case, resembled very closely, in many respects, the symptoms detailed of the others, the chief features of difference being in the violent struggles of the former; also in the swelling of the pudenda, and the purple colour of the mucous membrane of the vagina. The cause of the uterine inflammation in this case I regard as arising from the difficulty and tediousness of the calving process. We generally find inflammation of the uterus, when it does exist, occurring after a severe and pro-

longed labour; it seldom, or perhaps never, manifests itself when the parturient function is quickly and easily gone through, unless the animal is unnecessarily exposed, or subject to violent or improper treatment. By the long-continued action of the uterus, its nervous and vascular energies become exhausted; inflammation rapidly supervenes upon the already congested tissues; hence we have fully established one of the various forms under which this many-headed affection develops itself. Cases 3, 4, 5, and 7, present in every one that assemblage of symptoms which mark what is commonly understood by veterinary surgeons to be the nervous form of puerperal fever. Now, I am of opinion that a mistake lurks at the bottom of the notion respecting the nervous centres being the primary seat of this form of the malady in question. In the post-mortem appearances presented by Cases 3 and 7, the great nervous centres were unquestionably affected, but not affected *primarily;* the primary disease, in both of them, *resided in or was confined to the membranes investing the nervous masses.* Take Case 7, in which the puerperal disease alone destroyed the life of the animal: in this case the investing membranes were intensely congested, attended with softening of their fibres and a copious effusion both between the tissues themselves and the tissues and the nervous masses; while the nervous masses were not only firm in structure, but also unchanged in colour, facts which are too important to be passed over in silence: the loss of motor power in this case, the state of deep coma which gradually supervened, together with the other attendant phenomena, were all, without doubt, produced by the congestion of the vessels of the investing tissues, and consequent effusion therefrom. In speaking thus, I would be distinctly understood. I do not mean from the above observations to imply that the great nervous centres are never primarily affected. I simply mean, that these peculiar symptoms (symptoms which are usually considered as being the immediate result of a primary affection of the nervous centres) in some cases may result from primary disease of the investing membranes only; while, in other cases, they may be the result of a direct or primary affection of the nervous centres themselves, or probably from a combination of the two. This is a distinction which it is important to bear in mind if we wish to possess accurate knowledge respecting its site; and, simple as it is, it appears hitherto to have escaped the observation of those practically engaged in its investigation.

It is not my present intention to enter into any very elaborate consideration of this disease, as I propose saying something upon matters of a more popular nature: ere I commence, however, I would write a few words respecting the nature of the affection pre-

sented by Case 6. Case 6 is a form or type of puerperal disease of very common occurrence, and which I regard as arising mainly from debility of the psoæ muscles, and not, as the generality of veterinarians believe, from disease of the spinal cord. The facts in favour of this opinion are so evident and clear, that any one competent to judge, or practically acquainted with the subject, may readily satisfy himself of the truth of what I state.

Of the various questions which present themselves to breeders and owners of cattle respecting this disease, the following are, perhaps, a few of the most important:—First, At what period of their life are cows the most liable to be attacked with puerperal fever? Secondly, At what period after the animal has calved does the disease generally supervene? Thirdly, What is the average rate of mortality amongst cows attacked with this disease? Fourthly, What is the best method to pursue with cattle in order, if possible, to prevent the disease? Fifthly, Which is the best mode of treatment to pursue with cattle when so attacked? To these several questions I shall endeavour to reply as fully as my own knowledge of the matter will allow me: they are questions which ought to have been answered years ago; but no one appears to have thought it necessary. They are questions of great importance to the agriculturist; if they were fully answered he would be able to form a pretty accurate estimate as to the amount of risk he was likely at all times to incur with respect to puerperal diseases of a febrile nature. For instance, suppose it was fully ascertained from data furnished by the correct observations of a number of practitioners at what period of the cow's life the animal is the most liable to be attacked with puerperal fever, the agriculturist and cow-keeper would be able, in a considerable degree, to guard against it, either by feeding the animal, or taking such other steps as a like experience proved to be the best. It is of no earthly use practitioners writing "grand-iloquent" papers upon diseases like puerperal fever; or in their telling the world, that puerperal fever is a disease of the nervous system; or that "the name which is given to it is very improper, *and not suggestive;*" or "that bleeding and the administration of a powerful purgative are proper to commence with;" together with hosts of stereotyped statements of a like nature; statements which are unceasingly repeated, and which are without one jot of sound experience to substantiate them.

Question First. — *At what period of their life are cows the most liable to be attacked with puerperal fever?* I have in my possession notes and memoranda of twenty-nine cases of this disease, which notes and memoranda I have collected from cases I have treated from the month of July 1842, to the month of July 1849, a period of exactly seven years, and with reference to the

above question the figures stand thus*:—Out of the 29, 3 of them were attacked at the 3d parturient period, 5 ditto at the 4th, 16 ditto at the 5th, 2 ditto at the 6th, and 3 ditto at the 8th.

It appears, then, from the above numbers, that cows are the most liable to puerperal fever at the 5th parturient period; a fact which is noticed by Mr. Barlow in the Essay of his to which I have previously alluded.

Secondly, *At what period after the animal has calved does the disease generally supervene?* With reference to this question, the 29 cases stand thus:—

5	cows	immediately	after	parturition
8	ditto	in 20 hours	after	ditto
5	ditto	in 23 ditto	after	ditto
5	ditto	in 24 ditto	after	ditto
3	ditto	in 30 ditto	after	ditto
2	ditto	in 36 ditto	after	ditto
1	ditto	in 72 ditto	after	ditto

It appears, then, from the above, that after the 20th and 24th hours, the animal, comparatively speaking, may be considered as safe from the disease; and that after the 72d or 73d hour all danger may be considered as past beyond doubt.

Thirdly, *What is the average rate of mortality amongst cows attacked with this disease?* Out of the 29 cases, twelve I find recovered and seventeen died; which loss is equivalent to somewhere about 59 per cent: a loss which I am inclined to think is not so great as that of many other practitioners.

Mr. Cartwright, V.S. of Whitchurch, Salop, a man who I am sorry to say I am not personally acquainted with, but who I believe to be a most excellent practitioner with reference to this disease, states in THE VETERINARIAN for May of the present year, that "although I have seen at least a hundred cases, chiefly in this town, during the last twenty-five years, yet I am almost ashamed to confess that I cannot call to recollection that I ever cured a single case, nor have I heard of a case ever being cured by any of the quacks in the neighbourhood." I cannot suppose, however, that Mr. Cartwright has been so unfortunate as he himself intimates. Matters of this nature ought never to be stated from mere memory. For it is a treacherous faculty, and frequently leads us far from the truth.

Fourthly, *What is the best method to pursue with cattle, in order, if possible, to* PREVENT *the disease?* This is a question which I hope to see amply discussed by veterinarians in the pages of this Journal. I have but little to offer respecting it my-

* The cases I give in this contribution, of course, are included in the above number, except all such as Case 6, which are not included.

self; but I labour under a kind of feeling that something valuable may not only be said but *done* by way of prevention. With reference to preventing the disease, Mr. Barlow, in his essay, says, "There is a pretty certain preventive in milking the cow some time before calving; in full blood-letting before or immediately after; in purgatives, very limited diet, and in other depletive measures; each and all tending to illustrate the necessity of a vascular state of the system for its development." So far as my own experience is concerned, it is at variance with almost every one of the above observations. In the table which I have given respecting Question 2, the reader will recollect that I stated that puerperal fever supervened in five cows immediately after parturition. Now, it is worthy of remark, of these five cases, that every animal had been milked many hours previous to calving. The full udder, under such circumstances, is a powerful excitant to the uterus: this is a well known fact, and the consequence is, that if this natural excitant be withdrawn, the action of the process at once becomes diminished. I have known many cases, in addition to those already given, where the parturient process was prolonged for hours in consequence of the animals being milked, and in whom fever supervened almost immediately afterwards; the prolonged process, I think, greatly weakens the animal, and, as a natural result, the vital energies become less capable of maintaining their normal integrity. With reference, again, to bleeding and purging as preventives, I have nothing to offer in favour of either mode. I do not believe that they are preventives (at least, it has yet to be proved), and, to convince me, I should require numerous well ascertained facts bearing directly upon it.

First of all, we require to know what per centage of calving cows are liable to be affected with puerperal fever; then, whether that per centage becomes reduced in number in consequence of such preventive measures being brought into force: these are the only modes whereby the matter can be proved; and, so far as I know, no one yet has ever brought the question to such a test. That bleeding and purging are considered as preventives by people in general, I know perfectly; but, like many other popular opinions, the thing which is believed, requires first to be proved ere it becomes truth.

I perfectly agree with Mr. Barlow in recommending spare diet. I regard it, in fact, as the great preventive. The reader will recollect the full state of the stomachs and digestive organs in those cases which died, and which are detailed in this contribution; cases which point out the imperative necessity of spare diet; but when I say spare diet, I do not mean *poor* diet—the food should be good, but they should not have that huge bulk of matter which

they are capable of devouring, and which they appear so much to desire. I should commence the process for eight or ten days prior to calving, or even with some animals, much earlier; and the diet I would give should consist of bran, boiled linseed, and boiled oats, with occasionally small portions of hay. I should not always feed upon one mixture. I might occasionally substitute boiled barley in place of oats; and when the time for calving was very near at hand, say within a day or so, I should become more sparing with my hay, and more copious in my allowance of bran. With regard to the diet after calving, I should pursue much the same course I have named; perhaps for the first thirty hours I might allow the animal nothing but gruel and bran mash, in which I would mix a little oatmeal, or very thick gruel. I have sometimes thought (but hitherto it has never gone beyond a thought with me) that a broad cotton or linen bandage, fixed moderately tight round the cow's body immediately after calving, might prove of some assistance as a preventive. I have had no experience of its benefit myself; I merely suggest the thing; and if it did nothing more, it would prevent, in some measure, the animal from feeling that sensation of vacuity which must necessarily exist immediately and for some time after calving; and which I think, under some conditions of the system, may be injurious to the animal. I am told by a medical friend of mine, that he has known puerperal fever produced in women solely from midwives neglecting to bandage them after delivery; at any rate, a bandage or a broad belt having straps and buckles attached, and placed securely round the cow's body immediately after calving, and kept there for a day or two, could do no harm if it failed in doing any good.

Fifthly, *Which is the best method of* TREATMENT *to pursue with cows when attacked with puerperal fever?* Upon this question I feel that I could say much, but at present I defer its consideration; my contribution, I find, has already run to such a length, that was I to exhaust this last question I should swell it beyond all reasonable bounds. Suffice it to say, then, that I never either bleed or administer purgatives. I used once to do both, but my experience has shewn me in numerous cases that neither are necessary. This, I dare say, to the majority of veterinarians, will read somewhat strangely, being, as it is, totally at variance with almost every thing which hitherto has been taught upon the subject. The cases which I give, and the mode in which these cases were treated, so far as they go, are triumphant to every doubt which may be expressed by any one sceptical upon the question. I shall, however, wait with eagerness to read the opinions of others upon a matter of such weighty import; and, in conclusion, I earnestly entreat as many veterinary surgeons as possible to step forward and state their ex-

perience with regard to this disease in any or all of its bearings. The malady I have written upon is fearfully destructive; and if such diseases cannot be met with powers capable of wrestling with it, I, for one, shall say that it is a stigma upon our art—I shall say, that when we are the most wanted, we are of the least use.

CONTRIBUTIONS TO VETERINARY PATHOLOGY.

By WM. SMITH, *M.R.C.V.S. Veterinary Establishment, Norwich.*

FIRST CONTRIBUTION.

Diseased Molar Teeth, giving rise to Symptoms of Ozæna, mistaken for those of "Glanders."

I WAS requested a few days since to visit a horse which was taken from others on a large common in this neighbourhood, in consequence of being supposed to be "glandered." My advice was sought, for the purpose of giving an opinion with regard to the risk of exposing the remainder to his influence.

I found the animal to be very aged, and in a most emaciated and pitiable condition, with a copious greenish and very offensive discharge from the left nostril, with slight tumefaction of the gland on the same side, there being no appearance of ulceration, but the Schneiderian membrane having a leaden dirty hue. Taking all the circumstances of the case into consideration, his merely nominal value if well, &c., I considered it most advisable to recommend his immediate destruction, which was complied with. I ordered the head to be sent to my infirmary.

Being, in the course of the following day, in company with Mr. Gloag, of the 11th Hussars, I mentioned to him that I thought I had a case of ozæna, and he expressed a wish to be present at the examination of the head, a circumstance which I felt pleased to avail myself of.

A longitudinal cut was made with a saw on each side of the septum nasi, and a transverse one at a line between the centre of the orbits. Another longitudinal cut dividing the maxillary sinuses was made just above the fangs of the molar teeth on each side: by this means, we had a full opportunity of examining the septum nasi on each side, also the turbinated bones, and the frontal and maxillary sinuses. On the left side we found an accumulation of pultaceous food, covered with thick pus, completely filling the maxillary sinus, extending to the turbinated bones, and plugging up all the interstices formed by their convolutions.

The frontal sinus contained an accumulation of inspissated pus; the septum nasi was of a leaden hue, as also the membrane covering the turbinated bones, which was much inflamed and thickened, but there was no appearance of ulceration.

The difficulty was, to ascertain how the food got there. By the most careful search, it was very evident that it could not have been passed up through the external nostril; we therefore proceeded gradually to dislodge the accumulated food and matter, searching for its entrance, and at last found a hole sufficiently large to admit the little finger in the alveolar space appertaining to the last molar tooth, the fang of which was completely gone, and only a small portion of the crown remaining.

It was apparent, therefore, that the food, during mastication, was continually being forced into the space it occupied. The fourth molar tooth was absent, having evidently been lost from previous disease.

Upon examining the right side of the head, we found the turbinated bones and membranes covering the septum nasi comparatively healthy; but on looking into the maxillary sinus we found a cyst, about the size of a large walnut, containing limpid fluid, occupying the space immediately above the fang of the fourth molar tooth; and on examining this tooth we found it much decayed and quite loose, and below the level of the other molar teeth.

The teeth of the lower jaw appeared healthy.

Wishing to send you the head, we thought it better not to proceed in the examination, else we should have carried our investigation further, which would have prevented you from having a fair view of the diseased parts.

*** The mare—that being the sex according to the mouth—we should take by her teeth to have been about twenty years of age. Her incisors are all sound, and fairly worn; and so are the molars of the under jaw. But of the upper jaw, the near side second, fourth, and sixth, and the off side fourth molar teeth, are in a state of progressive decay: the worst being the near fourth and sixth, and the off fourth. The near fourth, indeed, has disappeared some time ago, as would appear from its alveolus being completely filled up, covered with gum, and obliterated, save a small portion of the tooth remaining anteriorly. The near sixth is also almost wanting; its middle and fangs being totally rotted away. Two-thirds of the off fourth are gone, and two portions that remain are loose, and ready to fall out.

The vacuity caused by the defective last molar teeth of the near side has opened a passage into the *antrum* or maxillary sinus,

through which the food has passed, and thence insinuated itself into the near chamber of the nose, between the turbinated bones, whence it has become discharged through the near nostril. This will account for the annoyance and irritation set up on this side of the head, for the suppurated and even ulcerated condition of the Schneiderian membrane, for the suspicious discharges, &c. It was evident enough to veterinary examination that there was no "glanders." The very circumstance of alimentary matters making their occasional appearance with the nasal discharges was quite enough to lead to suspicions to the contrary. Even had the case been considered as and destroyed on account of glanders, it would have been by no means a singular one: an interesting case of the kind being related in "Hippopathology," vol. iii, p. 176.

ED. VET.

SECOND CONTRIBUTION.

MELANOSIS AND OSSIFICATION OF THE CELLS OF THE VITREOUS HUMOUR.

History of the Case.—In the spring of 1848, I was visiting some diseased animals upon the farm occupied by the Messrs. G—, at Horsford, in this county, when my attention was directed to a white mare that had a tumour, about the size of a hen's egg, situate on the superior and inner part of the left thigh, in the subcutaneous cellular tissue, close upon the posterior portion of the mamma, on the same side. It was at this period a loose, detached, and insensible body.

The mare being in fine condition, and exceedingly fresh and vigorous for her age—sixteen years old; bred upon the farm, and considered by the proprietors the best doer and worker in their stable, they desired to have my opinion regarding the removal of this tumour. Upon inquiry, I learned that it was first observed when she was a filly by the side of her dam; it was not larger, then, than a walnut, but it had increased in size somewhat of late. I replied that it might be removed, I believed; but I thought, as it had existed for so many years without producing inconvenience, and taking her age also into consideration, I would rather wait and see whether it would continue to increase or not.

She had hitherto been, apparently, quite free from disease of any kind, and continued to perform her duties for many months after this conversation to the satisfaction of the owners, although the tumour gradually, though slowly, increased in size, extending upwards towards the mammæ.

I heard no more of her until early in the month of November

1849, when she was sent to my infirmary for advice, on account of a swelling which had appeared upon the abdominal parietes, on the side the tumour existed, going towards the sternum: this œdematous swelling, as a matter of course, was more observable on the Monday morning, after the day's rest on the Sunday, than at other times. I was thereupon desired to remove the tumour, if I considered it advisable.

I proceeded to examine carefully the tumour and left mamma, which was now tense and painful to the touch, as were the adjacent parts. On turning up her tail, I discovered a number, nearly a hundred, of distinct detached tumours, varying from the size of a marble to a pea in the cellular tissue beneath the skin covering and surrounding the anus, *labia*, and *perineum*, and extending down the hairless surface of the tail; its extremity being for about eight inches within its tip much thickened, and in circumference greater here than at its sacral articulation.

I at once told the man who led her to my infirmary that I suspected these were *black* or melanotic tumours; and, to place the matter beyond doubt, I selected one from the side of the vulva of the size of a large marble, and, cutting through the skin, quickly dislodged it: it was quite black, and stained the fingers as ink would.

I formed an unfavourable prognosis, and declined to remove the one in the thigh, and desired the man to inform his employers that the case would, in all probability, ultimately terminate in death; but that I would visit her in a few days, and explain the matter to them. I did so, and informed them that I considered it a constitutional disorder; and that I had no doubt but that others existed internally, which, coupled with her age and other adverse circumstances, made me look upon an operation as a doubtful means of ensuring restoration to health. The wound made by the excision of the small tumour had perfectly healed without treatment, leaving scarcely a trace of its existence behind.

In a week or two I visited her again, but declined to adopt any course of medical treatment, deeming it useless: I found the abdominal swelling much in the same state, and directed fomentations to be applied to it occasionally. There was little constitutional disturbance. The man informed me that she is stiff when at work, and does not do it so well as formerly.

From this time I heard nothing of her until early in February 1850, when I was again consulted. The tumour was fast increasing, and extending upwards, the mare flagging at her work, and the œdematous swelling more diffused: she was wasting, and there was considerable constitutional disturbance. Poultices were resorted to, and she was ordered a fortnight's rest.

I visited her again at the end of this period, and found ulceration had commenced in the tumour; or, in the words of the man, "it had burst, and discharged a large quantity of dark-coloured matter." It kept increasing and discharging an offensive dark fluid occasionally from this time to the end of May, when I visited her again. The emaciation is now considerable; she moves with great difficulty; suffers much pain: the stench from the tumour is insufferable. As she is now useless on the farm, I suggested to the proprietors the humanity of at once destroying her, to which proposal they assented. She was accordingly shot on the 4th of this month.

Having mentioned this case to Mr. Gloag, 11th Hussars, he went with me to see it while living, and, considering it one of great interest, he expressed a wish to be present at the post-mortem examination, and was a witness of the following morbid phenomena:—

Autopsy.

The Tumour, when I arrived, had been removed from its situation, as had also the abdominal viscera; it weighed more than twelve pounds, having two largish superficial ulcerations on its inferior surface, with an intervening firm structure. It presented no appearance externally to indicate its melanotic character, but on cutting into it its composition was evinced, it being composed of jet-coloured lobulated deposits, varying in size and figure, and staining the knife like brownish black paint, intersected throughout by dense cellular adipose and fibrous tissue, having such an appearance as would be produced by thrusting black globular and oval bodies of different sizes, from a walnut to a hen's egg, into a suet-like substance; some of this black deposit being encysted and distinct, whilst other portions were formed into irregular conglomerate masses.

I was then shewn another body about the size and form of a pigeon's egg, which was found floating amongst the intestines, and was the first thing that attracted the attention of the slaughterer: it was dense and firm, having a perfectly smooth surface of the colour and apparent structure of the peritoneal coat of the intestine, without the least appearance of ever having had a peduncle or attachment of any kind. Upon making a section of this body, I found the cyst of about the thickness of, and as firm and as like in texture, the coats of the small intestines as possible: it contained a sebaceous matter somewhat like the meconium in colour, but not quite so yellow. This body was once doubtlessly adherent to some part of the peritoneum, and was most likely detached from the viscera by the combined influence of its own gravity and the peristaltic action of the bowels. The friction its surface had been

subjected to whilst in its free condition in the abdominal cavity will account, perhaps, for its smooth, moist surface, and the non-appearance of any point of attachment. The contents of this cyst were melanotic, I should say, containing less carbonaceous matter than the deposits already described.

It is worthy of remark that this body was in a perfectly undecomposed condition; that it had no vascular or other connexion with the living structures of the animal body; nor would its appearance induce the belief that a very recent attachment to any organic tissue had existed.

Seeing that it possessed no observable resources for the continuation of its vitality, the only reason that I can assign for its non-decomposition, especially as far as the cyst was concerned, is its exclusion from atmospheric air whilst in this situation.

The Brain.—The animal having been shot through the head, I had not a fair opportunity of observing this organ; but I could not detect any abnormal matter.

The Heart appeared generally healthy; but a jet-black circumscribed globular body, about two-thirds of an inch in diameter, was imbedded in each auricle, visible only on its external surface.

The Lungs had several of the like colour and size, circumscribed and distinct, deposited between the pleura and superficies of these organs.

The Diaphragm.—Both its pleural and peritoneal surfaces were numerously studded with jet-black tuberiform bodies, from the size of a marble to that of a pea; its aponeurotic structure contained a greater number than its muscular: their attachment was superficial and slight.

The Liver was a mass of tubercles, entering into its integral structure and destroying altogether its glandular character; they were of a brown and dirty yellow colour, about the size of millet seed, the largest not exceeding the size of a small pea: there were but few dark or black ones present.

The Spleen, on the contrary, had but few, and those as large as a hen's egg, encysted, and mostly of a brown colour, in one instance approaching to black: this organ was enlarged.

The Mesentery had numbers of these tuberiform bodies, very black in colour, deposited between the layers of peritoneum, varying in size from a marble to a horse-bean.

The Omentum also had a large quantity, very black, but generally *small.*

The Fore Extremities.—On separating them from their connexion with the trunk, a large black melanotic tumour weighing several pounds was observed embedded in the serratus magnus muscle, near its insertion into the scapula, *in each extremity,* in the

same situation. These deposits were both divided in separating these limbs from the body.

Having already noticed the state of the vulva and tail, I have only to remark that the tumours in these situations were encysted, moveable, firmer, more defined, and tuberiform, than any others, except the principal one in this subject: they were placed in the cellular subcutaneous tissue superficially, having little or no connexion with the muscles underneath.

The skin at the extremity of the tail was enormously thickened by a deposit of melanotic matter into its interstices, forming a club-like termination.

The Eyes.—In giving the history of this case, I omitted to state that this mare was totally blind for some years. My attention was now directed to these organs, with the view of ascertaining whether this disease had produced their destruction. Such, however, is not the case: cataract has destroyed each eye, but the left presented an interesting specimen of disease, viz., *an ossification* of a triangular figure, of the cellular substance of the *vitreous humor*, filling the middle and one-third of the posterior chamber, having the capsule of the lens firmly attached to its anterior surface, being connected also posteriorly firmly to the retina and tunica sclerotica by dense bands.

REMARKS.—The disease called melanosis by medical and veterinary writers, black cancer by Dupuytren, and melanoma by Dr. Carswell, may be considered to be a morbid deposit of a black or blackish-brown colour, occurring in almost every part of an animal's body. It has been seen in man, and in a variety of the smaller animals, but appears to be a much more common disease in horses than in man or other animals. It has been found to exist in almost every organ and tissue of the horse's body. It is found much more frequently in white or grey horses than in those of other colours, and mostly in aged ones, as the pages of this Journal will amply verify; for whilst it records many cases of this disorder in white horses, we have few, if any, examples of its occurring in other coloured animals, although we are assured by French authors of respectability that it does affect them occasionally.

The scientific arrangement of melanotic disorders has been undertaken by Bayle, Laennec, Breschet, and Carswell. The latter has divided this disease into *true* and *spurious;* the first comprehending those cases in which the deposit depends on the process of secretion *within* the animal body; whilst the second depends upon the introduction of a carbonaceous body *from without*, or from the action of chemical agents on the blood, or from the stagnation of this fluid.

With the spurious form the veterinary surgeon has, I imagine,

little to do, as I believe it is seldom seen in his patients: the following observations will therefore be confined to the consideration of the first or *true* form of melanosis, which comes under his notice a great deal oftener than under that of the practitioner of human medicine. Four varieties of this form have been denominated:—

1st. *Punctiform melanosis*, in which the black colouring matter appears in the shape of minute points or dots, either grouped in a small space, or scattered irregularly over a considerable extent of surface.

This variety of melanosis is described by Mr. W. Haycock, V.S., of Huddersfield. The subject was an old grey mare, who had a melanotic tumour placed over the articulation of the inferior maxilla, and respecting whom Mr. H. writes, in THE VETERINARIAN for 1847, thus: "At the junction of the cerebellum with the medulla was a quantity of areolar tissue, which contained a great number of minute red and black specks; these black specks were very numerous, but were very minute: they presented, in fact, what Dr. Carswell would denominate the punchiform character of melanosis."

2d. *Tuberiform melanosis*, more common than the preceding form, where the tumour varies from the size of a millet-seed to the bulk of a child's head, or even of more considerable dimensions. It is in the loose cellular and adipose tissues that these melanotic tumours are disposed to attain great magnitude. Their large size seems to depend upon the agglomeration of numerous small tumours; they are met with encysted and without a cyst. This variety is not confined to any tissue, but may be seen in the cellular and adipose tissues or parts abounding in them, and on the surface of the peritoneum and pleura, as the post-mortem appearances of my own case of the Horsford mare will clearly demonstrate.

3d. *Stratiform melanosis*, occurring only in the surface of *serous* membranes. In the first stage the part is merely stained with the matter; in the second a distinct layer is deposited on the surface, of the consistence of jelly, and is enclosed either in cellular tissue or in a transparent membrane of new formation: it is not removed by passing the finger or scalpel over it. In some cases it forms a black coating, in appearance like what is produced by Indian ink.

Mr. J. D. Harrison, of Southport, in THE VETERINARIAN for 1841, furnishes a good illustration of this variety of melanosis coexisting with the *tuberiform*. After describing the appearance of the latter, he says, "on the pleura and peritoneum the disposition of the matter was somewhat different; it was effused on the surface of these membranes, not in *round masses*, but in *streaks* and *patches*. There seemed to have taken place on their surfaces a formation of cellular tissue, into which the black matter appeared to have been

poured; for it could be scraped off, and the serous coats were still left smooth and entire."

Dr. Copeland informs us that this form of melanosis is not often met with in man, but exists to a much greater extent in horses.

4th. *Liquiform melanosis* more frequently occurs from the softening of melanotic tumours; it is sometimes seen in small quantities in the cavities of the pleura and peritoneum. Liquiform melanosis is sometimes observed in the serous cysts formed in the capsules of the ova which have escaped from these ovaries, and in these organs.

In THE VETERINARIAN for 1839, we are informed by M. G. Andral, Professor to the Faculty of Medicine at Paris, that MM. Trousseau and Leblanc found, in a horse's kidney, a fibrous cyst of the bulk of a fist, which contained about eight ounces of a black fluid.

A fifth form of melanosis has been added by Dr. Noak, I believe, and very properly so, as far as the horse is concerned, which he calls *melanosis ulcerosa*; and which, he says, is more frequently met with in the horse than in man. My own case clearly establishes the existence of this form of the disease.

It has been shewn that one or more of these forms may co-exist in the same animal, or any one may be present singly. The *Tuberi form* is the most common of all the varieties of melanosis: the disease is never confined to one organ or tissue only, but is found to pervade a greater or less number, either successively or simultaneously. It may be so extensive as to destroy the natural structure of the part, as occurred in the case of the white mare's mammary gland.

The *bones* are not often affected by this disorder; but MM. Trousseau and Leblanc, in THE VETERINARIAN for 1839, mention the case of a white horse where the ischium was tinged black to a great depth, and was remarkably friable.

In the *Brain* the disease is also rare, although in its healthy state it presents in certain parts a black colour; and I have seen a case or two recorded of its occurring in this organ. It is hoped that I have shewn clearly the truthfulness of the foregoing classification of this disease, although but one case of each variety has been selected by way of illustrating the existence of these different forms. Being apprehensive that this communication has been extended already to an unreasonable length, I have purposely abstained from introducing others, though many such may be found in the pages of THE VETERINARIAN. Such as may require further information on this subject I beg to refer them to its volumes, which abound in matter treating on this disease.

Nature and Causes.—That melanosis depends upon a constitu-

tional cause may be inferred from its taking place in various parts of the same animal, and from its rarely, if ever, being found in one organ or tissue alone. It has been seen in the skin, liver, lungs, heart, spleen, kidneys, peritoneum, and pleura of the same animal.

M. Foy informs us that, in a portion of a melanotic tumour taken from a horse, chemical analysis shewed it to consist of albumen, fibrin, a black colouring matter, water, oxide of iron, and a few other salts.

The black colouring matter largely predominated, and seemed to be composed of a highly carbonized principle, probably altered crassamentum.

The fact which has been already noticed, that this disease is chiefly met with in white or grey horses, favours the doctrine of its origin from constitutional peculiarity.

Dr. Carswell remarks that this circumstance is also favourable to the theory which ascribes the origin of melanosis to the accumulation in the blood of the carbon naturally employed to colour different parts of the body, as the hair, choroid coat of the eye, &c.

Professor Dick, I believe, maintains that the dark pigment which should be distributed generally through the hair is removed after its formation, and deposited locally, and accounts thus for the dark deposits witnessed in this disease; and as we know that grey horses get lighter coloured as age comes on, most frequently becoming quite white, and that the disorder seldom exists to any extent in young horses—at least we have no record of its occurring in such—these are circumstances which go far to favour this hypothesis.

Another very ingenious theory has been advanced to account for the accumulation of this black deposit in the system. It having been observed by M. Treviranus, in experiments made by him on frogs, that, when the bloodvessels were deprived of their nervous influence, a black matter resembling the pigmentum of the choroid coat was formed in the capillaries, and in several membranes: hence the inference that the black matter thus formed proceeded from the deposition of the carbonaceous particles, which, not having combined with oxygen, had not been eliminated from the blood in the form of carbonic acid, owing to deficient nervous power and the retarded circulation in the capillary vessels.

In melanotic tumours there is little vascularity, and, consequently, hæmorrhage does not follow their excision; they appear to be deposits essentially of an inorganic character.

It does not appear that they increase much in size under ordinary circumstances. They may exist for many years, especially when they make their appearance in young horses, without acquiring greater bulk or occasioning inconvenience: of this we have

undoubted proofs, by the records of many cases; and it will be recollected that, in the one related by me, the tumour on the thigh was observed when the subject of it was a filly, and that it remained insensitive and stationary for many years.

Sometimes, however, one of these bodies enlarges rapidly, and the adjacent glands and textures become involved in this morbid action: the black deposition goes on so quickly, that, in the space of a few months, it amounts to many pounds in weight. The largest tumour of this description I remember to have heard of weighed 36 lbs. These tumours have never been known to terminate in resolution, but a softening and something similar to the suppurative process, occasionally occurs; they then discharge a black and very offensive matter, and ulcerate superficially, the investing integument sloughing more than the substance beneath. Under these circumstances, there is much suffering and constitutional disturbance. This morbid action is frequently, I believe, induced in the otherwise quiescent body by mechanical irritation, such as a blow, friction, or the application of irritants to the part; hence, in forming a

Prognosis,—Attention should be especially directed to the situation of the tumours. If they are found existing in exposed parts of the body, or having connexion with those designed for frequent motion, these are circumstances somewhat unfavourable.

If emaciation should co-exist without apparent cause in an animal affected with ever so small an external melanoid tumour, fears may be justly entertained that larger deposits exist internally which produce this appearance; for it has been invariably observed that these deposits never exist in one part or structure alone, and that the presence of one externally is, but too frequently, the sure indication of the existence of others internally.

In the great majority of melanotic cases, tumours are generally seen under the skin, covering the anus, vulva, and hairless portion of the dock; and, as they are usually numerous and small here, the excision of one, which, in this situation, may be safely and readily done, will be a good test of its nature. A lancet incision through the skin into a single one, should it happen so, will demonstrate its melanoid character: the lancet will come out stained black, if this be the case.

In most cases our prognosis, I fear, must be unsatisfactory: the size of the tumour, where it is external, its situation, connexion, extent, the age of the patient, present state of health and condition, are circumstances which must be taken into consideration before we hold out hopes of the ultimate result of

Treatment.—When the internal organs are much affected—which will be evidenced by the general emaciation of the frame,

in connexion with the external presence of few or many melanoid bodies—little good can be expected from medical treatment, our present knowledge of this subject being so limited. We should, I apprehend, endeavour to rouse the powers of life, to increase the tone and restore the healthy action of the capillaries, and to promote the action of the liver, glandular and digestive functions. For this purpose the vegetable and mineral tonics, the chlorides, and probably iodine, are worthy attention.

A free excision of all the diseased mass, where it can be done, is the only means of cure, and this will in some instances only afford a temporary relief. The deposition will probably still go on in some part or other of the body, and ultimately be the cause of death. There are, however, some instances of the successful removal of large melanoid bodies recorded, both by English and foreign practitioners.

Setons, blisters, and irritants, if applied to the tumours, will be found productive, I believe, of mischief, and likely to create malignant inflammatory action, followed, perhaps, by a softening, ulceration, and rapid extension in bodies, which, if not interfered with, might have remained in their *stationary* and *insensitive* condition for an indefinite period.

[To be continued.]

PARTURITION CASES.

By W. A. CARTWRIGHT, *M.R.C.V.S., Whitchurch, Salop.*

DEATH OF PANTALONADE (DAM OF HARRIOTT) FROM FOALING.

ON the 12th of February 1850 I was sent for by Mr. Harry Wadlow, the celebrated trainer, who resides at Aston, near Shiffnal, in this county, to see a very valuable thorough-bred mare, called "Pantalonade," who was in labour; from whom his attendants could not extract the foal, on account of its being a false presentation, viz., the head and one fore-leg lying back. The distance from my residence was about thirty miles. I arrived there in three hours, at nine P.M.; but on getting there I found, as I almost expected, she had foaled. The foal was dead.

Particulars.—This mare was thought not to be very well on the 10th inst., as she was wandering about the paddock, and getting by herself, as if for slipping her foal, her time not being up by about six weeks. On the 11th she was more uneasy. On the

morning of the 12th symptoms of parturition were coming on, and one of his veterinary surgeons urged very strongly that I should be sent for *immediately*, as he candidly said that he had not had sufficient experience in such difficult cases, and did not wish to risk so valuable an animal's life. Another veterinary surgeon was also in attendance; but he not being able to get the head or leg into its proper position, also now agreed that I should be sent for, which accordingly was done. As I before stated, I arrived there about 9 P.M., and found that the foal had been forcibly extracted in the false position in which it lay; and that the mare was in a very dangerous state, sighing, with cold sweats, and wandering about the box, having both legs and ears cold, with scarcely any pulse to be felt either at the jaw or chest. Brandy and stimulants were freely given, but without avail, for about three o'clock the following morning she died.

Post-mortem examination.—The internal coats of the uterus were one mass of sanguineous congestion; and the muscles and parts surrounding the pelvis were completely engorged with extravasated blood, evidently caused by the rupture of bloodvessels in the act of foaling. All other parts were perfectly sound.

Observations.—It is but seldom that mares require assistance during parturition; but when they do, their cases are frequently found to be very difficult ones, so that what is done for them must be done quickly; for when once pains fairly come on, our patients generally make short work of it, and either force the fœtus out as presented, or they may rupture the uterus, or produce death by hemorrhage, or exhaustion by violent uterine action. In this case the mare had not arrived at the full period of utero-gestation, and most probably the parts were not fully prepared for foaling. Supposing they were, the only plan would have been to have placed the hobbles on her, so as to have kept her quiet, and prevented her injuring herself and others; and this would have enabled the operator to have slipped back the fore-leg that was presented, which would have made more room to get the other leg up, which should have been removed in a similar way; then there would have been but little difficulty in getting the head up, and extraction thereby would have been rendered easy and safe. Should the mare prove in high condition, and very resolute, I should not hesitate to bleed and give anodynes. I should also try chloroform (which I never have done), all of which might assist us in righting the fœtus.

In the cow these presentations are very common indeed; but even in them there is often great difficulty in getting the head into its proper place without removing one or both of the fore-legs; but then what a difference there is in our patients. The one, tolerably calm at intervals, possessing patience and perseverance in assist-

ing us, of a more gentle and tractable nature; the other, all force and violence, with but little intermission until the affair is over.

I have seen several mares force the fœtus out while we have been attempting to remove a leg; but then the labours were of a more premature kind than this, and the fœtuses have been much smaller. The mares have done well.

In thorough-bred mares the legs and necks of the foals are unusually long, which renders it still more difficult to right them; though it is not necessary that we bring the legs properly straight into the passage, since they may come easily away if doubled up at the knees.

In *Bell's Life in London*, April 2d, 1843, it is stated, that the celebrated mare, the Queen of Trumps, the property of the Hon. E. M. St. Mostyn, winner of the Oaks and Great St. Leger, died at York on the 28th ult., giving birth to a filly foal. It was said to be a cross birth, and that no human aid could have saved her!

Extraction of a Calf,—not to be felt outside.

On the 17th of March, 1850, I was called in to a three year-old heifer, the property of W. Halstead Poole, Esq., of Terrick Hall, that shewed every symptom of parturition, with the exception that the calf could not be felt externally. The cowman said he never had felt the calf; that she was not at her full time; but that for the last day or two some fœtid discharge had come from her, and he feared all was not right; consequently I was sent for. Like him, I could not feel the calf externally. She was well off at the hips, and strained a little. On introducing my hand, I found the os uteri moderately opened, but that the head and fore-legs were doubled back. These I soon put right, and extracted the fœtus, which was very small, without any difficulty. It was alive, but died soon after.

Extraction of a dead Calf, six weeks over its time.

On the night of the 3d of April, 1850, I was called in to attend a large aged cow, belonging to our rector, that shewed approaching symptoms of parturition. I was informed she had gone six weeks over her time, and the cowman feared that the calf was dead; and, after examination, I was of the same opinion; for I found it had

not shewn any symptoms of life for some time, but lay on the right side, low down, like a lifeless mass. The cow was a little off at the hips, but not to the full extent that I could wish; nor were the passages fully prepared for such an event. On introducing my hand up the vagina, I found the os uteri about half distended, with legs presenting, and labour pains commenced. I thought proper to rupture the membranes. Soon after, I found that it was the hind-legs and the breech that was presenting. I left her for a few hours, so as to give the passages time to become dilated. When we went to her again she had made but little progress; and I now found that the calf lay upon its back, and that when she strained she forced the legs towards the rectum, instead of through the os uteri. Finding this, I passed a cord round each leg, and gently drew them into the passage, by which means I created uterine action; and by steadily and gently drawing at them, we gradually got the legs into the vagina, and ultimately the hind-quarters; and in about an hour after we extracted the calf. It had been dead some time; indeed, the putrefactive process had commenced. The calf was a very large one, and a male. In all breech presentations extraction is more difficult, on account of pulling in opposition to the growth of hair; on which account we ought to well lubricate the parts with oil or grease.

Extraction of a Calf on its Back, fore Legs presented, Head back.

On the 4th of April, 1850, Mr. —— came for me to an aged cow that could not calve. A celebrated man at such cases had been trying for an hour or two, but could not succeed in getting the head up. He then advised that I should be sent for, as he had done on several occasions before. On my arrival, I found the cow fully prepared in every way for calving; but the calf lay upon its back, with only the fore legs presented; the head being doubled far back against its side. After many ineffectual attempts to get the head into its proper place, I found I could not succeed without removing the fore legs; and even then I could not bring it forward without placing a hook into one of the orbits. In these cases, the great difficulty is the fœtus lying on its back, causing the head and body to gravitate into the uterus, with the front of the thorax forced against us.

Extraction of a Calf on its Back, hind Legs presenting.

On the 30th of April, 1850, Mr. —— came for me to a cow, four years old, that could not calve. As in the last instance, another celebrated man at such work had been in attendance on her; but from the state of the os uteri he was fairly frightened from making an attempt to remove it; as, he said, "an operation" must be performed on it. I found her well off at the hips, and about the vulva well relaxed. On introducing my hand into the vagina, I ascertained that the os uteri was dilated to about five inches in diameter, and in an *apparent* rigid state. On passing my hand through the os uteri, I found that the calf lay upon its back. The hind feet could be felt, but they were doubled up at the fetlocks, and pressed against the rectum and inside of the upper portion of the os uteri. In consequence of the calf lying upon its back, and the legs being doubled up, the latter was not forced *into* the os uteri: from which cause the os uteri could not be dilated for the cow to calve. I immediately got one of the legs straight, and brought it forward into the vagina, and passed a cord around it, and then served the other the same; afterwards, we used gradual traction to the feet until the os uteri was fully dilated, and in the course of an hour we removed a live calf, which, together with the cow, did well. I fear such cases as these may induce persons to divide the os uteri, thinking it in a scirrhous state.

In a fortnight after, this person had exactly a similar case; but, from using gross force, they burst open the pelvis somewhere; and the consequence was, the cow was obliged to be destroyed.

Extraction of a Calf, Head back, Calf dead, &c.

On the 8th of May, 1850, Mrs. Green, of Prees Heath, sent for me to see a cow that she thought wanted to calve. She was continually striking first one leg and then another up towards her belly, and had been doing so for a week or more. About a fortnight previously she had the "blain" very badly, and was bled twice.

Present Symptoms.—Strikes her abdomen occasionally with her hind legs; not in the least off at the hips, nor are the parts about the vulva at all relaxed: does not strain. The calf is supposed to be dead, which I believe, since it is never seen to move, and it lies low down, like a dead mass. From the cow not being off at the hips, nor the parts about the vulva being at all relaxed, and from the absence of any straining, I was led to believe that the other symptoms of pain were caused by some irritation of the stomachs or

intestines; consequently, I gave an anodyne, and ordered some purgative medicine; and was upon the point of leaving, when I bethought myself I would just ascertain whether the os uteri was at all dilated. To my great surprise, I found it was so to its fullest extent. From the os uteri being so fully opened, and believing the calf to be dead, and from the cow being in a healthy state, and her hind parts being particularly roomy, I thought it prudent to attempt its removal; though, as a *general* rule, it is highly imprudent to do so when cows are not "off at the hips," and the other parts are not prepared for such an event. To this end, I ruptured the membranes. The head was lying doubled back, and one of the fore feet down towards the udder. The discharged waters were fœtid and discoloured, and the placenta was in a putrefactive state, and, of course, the fœtus was dead. After putting all right, and securing cords to the fore legs, I put a hook into one of the orbits, and one of Nelson's forceps into the nostrils, by which means we gradually drew the fœtus into the vagina, and thence into the vulval opening, where we allowed it to remain for some time, to give the parts time to gradually give way. Ultimately, we got it away without without much force, and afterwards the placenta; and the cow did well, without any further attendance.

Observations.—The great peculiarity in this case is, that of the os uteri being fully distended without the female being in the least "off at her hips," or shewing the least appearance of parturition about the vulva.

I have seen several cases where violent premature labour-pains have come on which no sedatives would allay, and where the cows have not been in the least off at the hips. In some of them, nothing would satisfy the owners but that the calves must be got away, no matter what force was required to be employed. Of course, the consequence has been death to the animals.

In some of these cases, although they have not been much meddled with at first, the cows have become so exhausted before the parts have given way and the calf has been extracted, that they have sunk under the labour. It therefore behoves practitioners to use great discrimination in deciding what is to be done in such difficult cases.

I strongly advise every one that follows cattle practice to become possessed of Nelson's (of Sheffield) forceps; for I have found them in many instances extremely useful, and without them should have experienced very great difficulty in removing fœtuses. I know of nothing so useful, or that is less likely to injure parts, supposing their hold should at any time give way.

CONTAGIOUSNESS OF STRANGLES.

By J. T. HODGSON, *V.S.*

Sir,—I BEG leave to offer a few additions to the collection of observations on this subject in your January number, my experience having shewn me the disease as it was entertained by Sollysel, and those who agreed with his opinions, viz. that strangles is contagious; but, I am of opinion this is not the ordinary cause of the disease, which is, in general, the consequence of fever, from *herding* young animals; and this is the view I stated of it in a short paper in THE VETERINARIAN about twelve years back; and that we were aware at the studs in India, that it could be communicated by inoculation; and that other young animals were also liable to similar kind of fever. It is not always eruptive, nor is this form necessary; or to suppose that this appearance of it "is an effort of nature to discharge out of the system some general disease of it." It is quite enough to account for this fever, that the young animals are so circumstanced that there is an impossibility of the system continuing to carry on its various operations in a healthy manner; in other words, there is an inability in the young animals to live any longer in the forced condition to which they are exposed; for it does not attack them till they are so situated; and after the excitability is exhausted, by once having this fever, the young animals thrive, although again under the influence of the same exciting causes, without again being so liable to fever of any kind; for, as in the case of older colts or adult horses that have once had this fever, the exciting causes must be more intense, as very foul stables, being placed on ship-board, &c., to again produce fever: in common language, older horses are said to have become seasoned to this *herded* manner of living. I use the word *herded*, because this fever occurs to young animals in eastern countries that are not stalled, and cavalry stables for entire horses are very spacious, only a thatched high roof on pillars; even those with Syrian roofs are equally spacious and open; and under these circumstances the fever is in general mild, common fever. I am of opinion none escape having it; but it is sometimes so mild as not to be seen, except sometimes in the slight effect of the tumour between the jaw bones having suppurated: whereas, when the fever occurs to closely-stalled colts, or older horses, it is a specific or malignant kind of fever, and then sometimes the consequences put on the characteristic forms of farcy and glanders.

There is a seeming identity of these diseases, from my own experience, the difference being, as I have stated, whether arising

from fever more or less mild or malignant. I agree with the best veterinary writers, that they should be treated in the usual manner, as distinct diseases, under the local symptoms, the forms oftenest seen by private practitioners.

This is the only way, I understand, that glanders might be caught from strangles, when the fever is produced from the latter causes; for the ulceration of the Schneiderian membrane that sometimes occurs in strangles heals up, those arising from fever produced by breathing the air of foul stables or from being on ship-board is never curable; and this distinctly shews the difference in the nature of the two fevers; but, as the one certainly does supervene on the other, or rather become contagious, in the manner described, I agree, therefore, with the expediency of separating colts with strangles from healthy horses, particularly if in stables; for there is a possibility of contagion, and the incurable forms of disease—glanders and farcy—an instance of which I shall state.

I was sent for to examine the colts at a stud remount depôt. The colts had been allowed (as shewn by the annexed return), to have strangles, as if it had been considered a matter of course in the stables, without being removed to the hospital stable, and there were several cases having the appearance of farcy and glanders; in fact, I thought proper to apply for the advice of Mr. Purvis, V.S., of the 4th Cavalry, and he agreed with me in opinion. I was at this depôt for four years afterwards, without this again occurring, by attending to separation of colts as they became affected.

There were upwards of 1000 entire colts, the purchases being between 300 and 400 colts, yearlings and upwards, a few arriving at the depôt at intervals, from November to April annually. The hospital returns from the first purchases of 1827-28 are,—

1828.	Colts.
February	100
March	99
April	89
May	118
June	131
July	101
August	94
September	90
October	78
November	62
December	42

Hot winds to the middle of June, then begin the rains, which continue to the middle of Sept. Cold at night, hot in the day from Oct. to December.

1829.	Colts.
January	31
February	29
March	32
April	27
May	31
June	32
July	42
August	38
September	36
Increased by Messrs Hodgson and Purvis to	50
October	41
November	18
December	17

1829.	Colts.
January	31

1830.	Colts.
January	39
February	29
March	24
April	53
May	64
June	157
July	209
August	195
September	160
October	133
November	80
December	52

1831.	
January	39
February	30
March	42
April	51
May	63
June	210
July	173
August	105
September	64
October	54
November	34
December	45

1832.	Colts.
January	46
February	63
March	80
April	59
May	54
June	80
July	100
August	112
September	109
October	85
November	85
December	104

1833.	
January	93
February	96
March	99
April	145
May	151
June	154
July	140
August	121

N.B. The increase in the number of colts was from this fever or consequences: 1829 is the year separation of the diseased from healthy colts was not attended to. The greatest increase is during the hottest and rainy months, except at the beginning, when it began a few months after purchase, and this was also the case in subsequent years.

Before 1829 the colts in the upper provinces were purchased of the native breeders by native dealers, who sometimes suffered losses from colts having this fever while in their possession, and being unfit for admission into the service.

In England it occurs at various periods, according to the ages at which colts are transferred from breeders to trainers, dealers, private purchasers, remount, &c., and is frequently the cause of litigation, some able remarks on which have lately appeared by the editor of THE VETERINARIAN.

I was three years with two brigades of horse artillery at Meerut, remounted annually from the stud depôts, the colts from which,

although some came 500 miles, never had strangles after joining; the excitability had been exhausted previously by having had fever and strangles in some form while at the remount depôt.

I was two years with the body guard without having cases of strangles; but the horses had farcy and glanders without my seeing the fever, the cause, no doubt, being the stables the horses were in when on duty.

I was five years at the Hipar stud, where there were fifty English and Arabian-bred mares: the produce, between sixty and seventy per cent. annually, remained at the stud. I remarked strangles did not attack all the young animals, appeared at no particular season of the year, at all ages, from three months to four years old; and it appeared one or two years running, and not afterwards for the same period of time.

While the colts remained isolated at this stud, or at the breeders' in the province, strangles did not usually attack them; neither did it from the change in the mode of feeding and management *immediately* after purchase. It did not attack all the young animals, but individually at uncertain intervals, in general a few months afterwards, when a *plethoric state* of the system was seemingly induced; thus a two-year-old purchased with yearlings would have fever and strangles singly, among two year-old colts that had been a year at the depôt; and it happened without relation to season, but it was more frequent in the hottest and rainy seasons, (as shewn by the return), when fever of any kind was most likely to appear.

On consideration of the whole of these facts, I am led to infer, with Sollysel and others of the same opinion, that horses "must have it once in their lives." That all young animals are subject to a similar kind of fever, from predisposition in the young animals' organization, from delicacy of the tissues. I have watched the approach of fever in colts, treated the fever to prevent the local affection, and the animals thrived afterwards, as well as if the latter had occurred; its doing so, however, is evidence of the crisis of the fever, and that the young may be considered safe; for when it was otherwise, they did not, in general, thrive, which has been often noticed by others; and attentive observation shewed that, in these cases, it had affected the respiratory organs; and while isolated in the hospital stable such colts would thrive and get into condition, but sometimes, on being returned to the crowded stable, would again repeatedly be returned to the hospital stable with hectic fever, which sometimes ended fatally, from abscesses in the lungs. However, the deaths were few, considering the climate; about three or four per month during the hottest and rainy months, and then they occurred rapidly from pleuro-pneumonia.

I regret to have lost the memoranda of the admission of the colts into hospital, as the state of the colt or form of disease was noted, whether fever, catarrh, strangles, or abscess in any other part, &c.

The treatment depended entirely upon the state of the fever, and to prevent vital organs being affected, when the thermometer was upwards of 100° in the hospital stable (80° of Fahr. behind a refrigerator, well watered, at the doors of private dwellings), during the hot winds of April and May, at the cessation of which, till it rained in June, the heat was so insufferable that I used to wonder how my patients recovered. But, according to the degree of fever, if necessary, by bleeding, cold water affusion, nauseating doses of aloes in solution—alone, or combined with nitre or salt—I managed to keep down the fever; which was, with me, the principal indication of cure. I should have lost more of my patients by death, farcy, or glanders, had I waited for the system ridding itself of morbific matter by the eruptive process;—whether it happened or not, the fever once subdued, I had recourse to mineral and vegetable tonics, and continued these after the colts were discharged from hospital till they began to thrive; otherwise the object of the remount depôt would have been lost—that of increasing the size of cavalry horses, by feeding better than the native breeders and dealers*.

I could add a few notes in corroboration, but I have already, I fear, occupied too much space, so will defer it to some other time.

Your's obediently.

W. Percivall, Esq.,
Editor of "The Veterinarian."

REVIEW.

Quid sit pulchrum, quid turpe, quid utile, quid non.—Hor.

PRACTICAL HORSEMANSHIP. *By* HARRY HIEOVER, Author of "The Pocket and the Stud;" and "The Stud for Practical Purposes and Practical Men." London: Longman and Co., Paternoster-row, 1850. Small 8vo, pp. 213.

THERE are manifestly two, if not more, kinds of horsemanship in practice among us in this country;—in other words, we are in the

* This mode of remount was preferred by the cavalry, and I had reason to think it was equally advantageous in a political point of view, as it gave employment to many Musselmen of higher caste than those at the remount depôts.

habit of riding after two different modes or fashions: one being that which seems to come natural to us, our indigenous or characteristic British mount; the other, that which is taught in the riding-schools, the military mode of riding or *système de manège*. There exist varieties and intermediate seats on horseback between them; but to one or other of these two modes of riding may be referred, we opine, the fundamental principles of horsemanship. All our *mâitres de manège*—the Duke of Newcastle, the Earl of Pembroke, Berenger, &c., appear to have viewed this latter as the only true or proper method of riding or managing horses; and for purposes of the *manège*, for elegance, and, questionably, for military execution, it is to be preferred. But, for ease; for what we understand by "sticking on" across country; for advantage—through the relief the rider is capable of affording by it to his horse, at the time he himself is engaged in racing or hunting—our *jockeying* mode, as it is called, must certainly claim the priority. And this it is which Harry Hieover, in the work before us, has aptly denominated "PRACTICAL HORSEMANSHIP." "Of course," says he, "wherever and whenever horsemanship is displayed, be it of what sort it may, it is practical; but I mean by the term to indicate such horsemanship *as is in every-day use*." Preface, p. v. Indeed, it might very well go by the name of *natural horsemanship*; since no sooner is a person who has never ridden before placed upon the saddle, and the horse begins to move, than up go his legs, and he instinctively holds fast either with his knees or his calves: admonished by which instinctive emotion, he takes care to have his stirrups taken up short before he proceeds further on his adventurous cruise.

Seeing, then, that the *manège* which our forefathers regarded as the only true art of equitation, is, except for military and riding-school purposes, fast losing favour in our own country, and that in lieu thereof a more natural, easy, and effective horsemanship has come, almost universally, into vogue among us, need we feel any surprise that a work commendatory and instructive of such a mode of riding should make its appearance? The only surprise is that such a work has not occupied the press before: and to our thoughtful friend Harry Hieover, who has on former occasions added as well

to our edification as our amusement and delight, are we indebted for this useful little essay on horsemanship "for every-day use," *such as it should be.* Admirers of the *manège* and military men will smile at us for saying this. Smile, however, they may; since we know from experience that the firmest seat a man can have upon his horse is with short stirrups and his knees closely clenched in front of the stirrup leathers. And what goes far in confirmation of this opinion is, that our cavalry in general are now riding at least two holes shorter than they were instructed to do at the time when first military equitation came to command so much attention in our army; and the notions of the writer are, that one day they will come to ride even shorter than they yet do. Our author, Harry, became spurred up to write the practically, useful, and entertaining little work before us by the following incident:—

"Some time ago I was told by a valued friend that he always hired a horse for two months in the summer, for the benefit of air and exercise. 'But,' said he, 'the last I hired, if he came near a wall would always take me up to it; and for the life of me I could never get him away from it, till I got some one to lead him off for me. Now,' continued he, 'if you would write a book on common ordinary riding, I dare say you would tell me how I could have managed this horse; and depend on it, there are thousands who ride as I do for health, who know no more of riding than myself, and to them your book would be invaluable.'"—"I promised to make the attempt; the result is before the reader."—*Preface*, p. vii.

In sitting down to compose such a work as the present, our author, it is true, has had to rake up his recollection for every thing he has, as a practical horseman, seen and done, so that he may tell his reader the best way of doing such and such things, and the reasons why such and such things are so and so done. But what strains the mind more than this? Memory must furnish the pen with matter; judgment must direct the hand: and though the writer has but to deal with the common equestrian affairs of life, yet to describe common things in a proper manner was a task at which even Byron himself experienced difficulties; hence he wrote, for the motto of his "Don Juan," Horace's line,

"Difficile est proprie communia dicere."

And nothing shews the difference more conspicuously between the practical man—by which we mean the man who has seen and done

things himself—and the mere pretender to practical knowledge than his mode and style of representing, in such an affair as horsemanship, the feats of himself and his horse upon paper. There is as much difference between a writer of one class and one of another, as between, in riding on horseback, whether it be with hounds or along rotten row, "going like a workman," and "going like a muff." It reminds us of an old acquaintance of ours, an excellent violinist, who simply required anybody to take up his fiddle-stick, to tell, whether he was or was not a performer on the instrument. In like manner, we might say, "write a page, Sir, on horsemanship, and we will tell you whether you can ride or not." And now we have hit the precise nail on the head which points to our author. Harry Hieover is in every page and in every line, as anybody who knows "anything about horses" may, and soon will, discover when he comes to read his book, a practical horseman. He rides with equal ease and skill the hackney, hunter, and racer; he is acquainted with the peculiarities, powers, and caprices of each; and shews what sort of riding each requires; explaining, as his ready pen glides along, the seat and the hand at different times called for, and why a long stirrup may be preferred in one case, and a short one rendered indispensable in another. We are much mistaken if the subjoined extracts we have selected do not fully bear us out in our commendations of the practical teacher before us. Let us take, for a sample, his sketch of four racers, all mounted and ready for the start, as shewing that, although every one is, of course, ridden jockey-fashion, yet is the riding not precisely alike in any two, but varied "in accordance with the temper, courage, and going of the horse."

"The first man we see is raised slightly, and steadily, in his stirrups; his body bent gracefully over his horse; his head a little inclined to the near side; his hands well down; the back of his elbows near the centre of his body, and perfectly still, merely lightly steadying his horse's head and holding him together; his feet and legs in an easy position, and steady as if nailed to his saddle-flap. About such, with a little variation, would be the seat of every jockey under the same circumstances. Now, if we look at the horse, we shall see why he can be thus ridden: he comes smoothly and gracefully along, going (in riding phrase), 'within himself,' just the pace his rider wishes; his neck gracefully bent; his head in the right place, inclining to his near shoulder; his nose

in, and his ears in that middle position that shews good temper, and absence either of alarm, impetuosity, or sluggishness. This horse is pulled up merely by a gentle pressure on the bit, which, bringing the body of the rider quietly into his seat, it is sufficient to effect, and with such a tempered horse would be a signal that the canter was length enough. He turns round and walks back cool and collected, looking placidly and good-humouredly around him; and on the jockey patting his neck, it is seen that horse and man are on good terms with each other."

"We now see a rider coming along on a resolute leather-mouthed horse, 'who is pulling double:' he comes with his head low, directly in a line with his body, and every now and then thrusting it out between his legs, with a force no arms could controul. There is a determination in his eye, and a fixed, forward position of the ears, that shews his pulling has quite as much of temper as of any willing energy in it; for, possibly, when really called on, he curs it at once."

"On such a horse we see the jockey is neither standing in his stirrups, nor with his body thrown back in the seat, but in a middle way, so as to allow him to 'give and take' with the horse, as his resolute temper may render necessary. His feet are fixed firmly in his stirrups, and thrown or rather held forward to give a stronger fulcrum to the body; his arms are pulled nearly straight. This causes him to keep his body in such a position that he can yield it forward when his horse gives one of those determined thrusts out of the head that such horses are very apt to do; for the reins being knotted, if the body was held stiff, the man would be pulled over his horse's head; and further, by occasionally lessening for an instant his pull at his horse, he makes a fresh impression on his dead mouth. No man could retain a neat or graceful seat on such a brute as the one I describe. We will now look at him pulling up. No gentle pressure will do here, no indication of the rider's wish would be attended to. We see the man throw his body back: this checks the horse, but does not pull him up. It is repeated, perhaps, again and again; at last he is, as a sailor would say, 'brought to;' and, in truth, no bad term for pulling up such a reprobate. He comes back walking, *now* sluggishly and doggedly along. You seldom see such a horse look about him, but would be found ready to salute anything within his reach with his heels. If he does look at a passer-by, it is with something of the amiable ken of an over-driven, half-infuriated bullock. We see the jockey stretch his fingers on his thighs, to get them suppled after being cramped by the mauling they have had; for persons who have only ridden ordinary horses have no conception how a thoroughly resolute race-horse can pull,—as our late friend, Mr. Jessamy, would

say, 'Can't they, though?' Nor is this to be wondered at, when we consider how little the mouths of racing colts are attended to; so, if disposed to pull, they are allowed to do so; and by constantly lugging at the boy at exercise, who, for such horses, is selected among the strongest in the stables, their mouths become insensible, and sheer force and management alone holds them,—and not always that either.

"'Here cooms a flyer; that's the woon for moy money,' cries some whapstraw, seeing a third horse coming; and a flyer he appears to many just then. This is a bit of a puller, too, but nothing like the other; and he does it in a different way. He comes 'star-gazing' along, his nose out, and that flung from side to side in impatience of controul, not from ill temper, but impetuosity of disposition and excitement. He gallops somewhat high, and comes striding along in any thing but a straight line: from the manner in which he flings himself about, his ears in constant motion, sometimes forwards, sometimes inclined the other way, as if catching each noise he hears before or behind him; his tail with its end turning upwards, he comes wildly along, and is only kept straight by the restraint of the bit, and that depending on the martingale not giving way; if it should, no living man could guide him.

"His jockey we see quite down in his seat, his feet forwards, his body thrown back; the reins held as wide apart as the knot will permit, that each hand may be the better able to steady the head, that never allows the same hold of it to be retained for a minute. This horse is to be pulled up without much effort, for his mouth is not a dead one, and the martingale gives the bit a hold on the bars of the mouth; without it, the bit would only come against and up to the corner of the lips, and give no hold. Coming back, we see him too impatient to walk, but dancing about, and half-starting at every thing he sees. We see and hear his jockey trying to pacify him, but he is too excited to be cooled down. Probably we see symptoms of sweating, odds against the Flyer. I should say, 'if a false start or two take place, a pony to a fiver he does not win.'

"Now comes quite a different gentleman, and ridden quite in a different manner. He comes his up gallop at a rattling pace, because he can't help it; his ears close down on his poll; his tail switching, not from vice, for he is a good-tempered horse, but a lurching sluggish rogue: if he was induced to shew any trick, it would probably be bolting somewhere, if not well watched, when the pace became too fast to please him.

"His jockey we see sitting down in his saddle, his legs rather back, so as to be ready to give him a taste of the spur if necessary. He is kicking and twisting him along, and shaking him every

stride; in short, 'getting him on his legs,' and trying to infuse some energy into him. He hugs the rails as if he was looking for some vacancy to bolt through. His jockey now threatens him; the rogue understands the hint, and finishes his distance straight and well. No difficulty in pulling up here: the moment his jockey stopped shaking him, his pace slackened, and the only care required is, that he may not stop too short.

"He is now coming back. He walks lazily, as if the sun was too hot for him. His jockey kicks him along, and is obliged now and then to give him a twist and shake to keep him going. This is a kind of horse some jockeys are famous for riding. Old Sam Darling was one.

"I trust, from the description I have given of four different jockeys riding as many different horses, it will be seen, that though the seat of each might very nearly resemble the other under the same circumstances, the seat must be varied when circumstances vary also; therefore, to become a horseman, it is absolutely necessary that a man must be put on different horses, to teach him how to act under different circumstances."

No man, in such natural colours, could depict such a scene as this, who felt not at the time that he was writing of passing events in which he himself *(quorum ipse, &c.)* had not been a frequent actor as well as spectator, as well as a thorough experienced horseman. We can therefore readily believe him when he tells us, he "writes from personal practice, and not from mere observation or theory."

For general purposes—for purposes either of business or pleasure, on the road or in the park—the grand desideratum is a good hack, well bred, well broke, pleasant to ride, and "as handsome as a picture." Of all descriptions of horses this, perhaps, is the most difficult one to find, and, when found, frequently grows into such esteem with his master as not to be parted with for "love or money." People in general prefer a little horse or a cob for a hack. Our author's "fancy" in this respect is not very far off from our own.

"I would fix the standard of such a horse at fifteen hands; certainly not more. The more breeding he has the better, with as much strength as can be got without bordering on coarseness. He should be particularly neat and pretty: handsome is a term I should use to large horses. He should be long in proportion to his height, that length made out by the distance from the back of the wither to the bosom, and from the hip bone to the extremity of the haunch. This gives strength, propelling power, and freedom

of action. His step should be light, as if he was stepping on hot iron; perfectly quiet and placid, yet so free, that a motion of the leg, or a sound from the mouth, is enough to set him going. He should take to the trot or canter at once, on the proper indication from the rider; have a light delicate mouth; and be so handy, that the rider, with his reins in one hand only, could, by a turn of the wrist or the pressure of a finger, twist and turn him in any direction. In his walk, he must step fast and gracefully. His canter should be elegance itself. And if with these he can trot handsomely at the rate of a dozen miles an hour, it is fast enough; and on such a horse I consider a man is carried like a gentleman on the road."

Speaking of "bits" and "bit-makers," Harry Hieover has detected an error they (the latter) are very apt to run into when applied to, to alter or change a curb-bit for a runaway horse. To render the bit "more powerful" they lengthen its leverage; and in so doing, not content with making the lower branch longer, they must likewise increase the length of the *upper* one; "doing which he certainly made a larger bit, but diminished (instead of increased) the effect of the lever; for lengthening the upper branch, only made the curb chain act higher up the hind part of the jaw, and, to make that purchase equivalent to the former bit, a longer lever below was necessary. Now, had he diminished the height above from two and a quarter inches to less than two, and added two to the lever below, the horse's mouth, if properly curbed, would have been in all but a vice."

With this extract we shall conclude. We have, we feel quite sure, given specimen enough to convince those least acquainted with our friend Harry, that in the present work he has, to say the least of it, been "riding his hobby." Never has he been more "at home;" —never more felicitous in his attempts to please, while he has laboured to render himself useful as a guide to the tyro horseman. To the man who is beginning to ride, and who is desirous of being able, creditably and without risk of danger, to do so, the present little work, aiming only at teaching the truly useful in riding, will prove a valuable acquisition.

Home Extracts.

Pleuro-Pneumonia amongst Cattle.

By George Waters, *Jun., M.R.C.V.S., Corn Exchange Hill, Cambridge.*

PRIZE ESSAY.

[Continued from page 335.]

The inflammation of the pleura leads to an exudation of fluid, one part of which settles to the lower part of the chest, in a liquid form, more or less sanguinolent and ropy; another adheres to the side of the pleura, and forms layers, to which the term coagulable lymph is applied: in some instances those exudations lead to adhesions between contiguous pleuræ.

The effusion of fluid in the cavity of the chest must interfere with the conditions of the lung, especially if the latter be in a healthy state: in that case it will become compressed; but if the lung be inflamed, then the degree of firmness, as well as volume which it acquires, enables it to resist the pressure of the fluid, so that the presence of the latter in large quantities must then lead to the dilatation of the sides of the chest. The cases described justify the supposition that the pleura is liable to be affected earlier than the lung. Thus, in the third case, the pleura of the posterior lobe was opaque and thickened as far as its base, whilst the corresponding parenchyma of the lung exhibited few, if any, signs of disease: a similar state existed on the opposite side, in which the pleura and lungs were both diseased at the spinal edge of the middle lobe, whilst at its free edge the pleura only was affected.

The tendency on the part of the pleura to be first affected is not without practical importance. Commencing pleurisy may furnish the first untoward symptoms, and indicate the propriety of active treatment, to which the disease will at that period in all probability be amenable.

The appearance which the sub-pleural cellular tissue presents in this disease is not without interest. It differs from the layers of coagulated lymph adhering to the outer surface of the pleura, inasmuch as it is firm, indurated, and more or less beset with cells. In that respect it closely resembles the interlobular cellular tissue, and ought to be considered in association with the diseased state of the lung; but that it may be partly the means of communicating

the inflammation of the pleura to the lung is a consideration not to be overlooked.

The changes which occur in the parenchyma of the lung in this disease may be considered in reference to two tissues; the one the vesicular or proper structure of the lung; the other the intervening cellular tissue, diffused through it in areolar webs, and separating the pulmonary tissue into lobules: hence it may be termed interlobular areolar tissue. It will simplify the study of the effects of this disease to consider the latter first; and if we refer to fig. 6, which represents a piece of healthy lung, we shall find the interlobular tissue (*c*) but indistinctly marked; but if we pass to fig. 5, which is a drawing of a piece of lung affected with emphysema, we may perceive that this interlobular cellular tissue is dilated by air (*b* and *c*), but still retaining its areolar, glistening, and semi-transparent character. If we pass to fig. (2 *d*), we shall find this offering a white or yellow colour, and assuming a firmer structure, interspersed with small cavities: that interlobular tissue, however, is seated amidst nearly healthy lung; but in the same drawing we may observe at letter (*a*) the pulmonary tissue in apparently the first stage of inflammation; and in that part the interlobular cellular tissue (*e*) presents a degree of thickness much greater than what it did in the healthy portion. But if we next proceed to fig. 1 (*c*), or fig. 4 (*c*), we find this interlobular cellular tissue offering such a degree of thickness, as to give it the appearance of entering in a large proportion into the structure of the lung itself, and its continuity with the sub-pleural cellular tissue is such as to warrant the conclusion that they are identical in character.

Whatever may be the form of the pulmonary cells and their relative arrangement, it is quite evident that, in that stage of inflammation called hepatization, these cells become obliterated. This obliteration is due, in our opinion, to a change which has taken place in the walls of those cells which have become thickened through an addition of organic matter, in the same manner as the inter-lobular cellular tissue had become increased in volume.

A question has been mooted whether the tissue of the lung swells in inflammation, seeing that its volume is limited to the capacity of the thorax, but the swelling takes place inwards, i. e. the walls of the cells, by increasing in thickness, obliterate the latter. As the middle lobe of the right and the anterior part of the posterior lobe of the left lung are the parts which the inflammation seems usually to affect first, it would be advisable, when examining the chest of an animal, to direct our attention to the middle part of the back in the region corresponding to the angles of the ribs.

In the last case described (15), a morbid product was found not only in the anterior lobe of the lung affected with the disease, but

also in that of the healthy or rather emphysematous lung: this product presented all the characters of the tubercle. Now, without saying that the constitution which is favourable to the development of tubercles may not be a predisposing cause of the disease in question, yet it is evident that the presence of tubercles in the lung, at least in their first stages, does not render the parts around them more liable to inflammation than other parts of the lung; a fact not without importance as regards the general history of the tubercle.

Having concluded the principal matter that I have to communicate on those parts of the history of the disease which have reference to its symptoms and to morbid appearances after death, we think it better, before we take up the several heads under which the society has expressed a wish that it should be considered, to bring forward, as concisely as possible, cases which have fallen under our observation, and from which the opinions we shall have occasion to express, when treating of those heads, will be chiefly drawn.

Case 1.—Mr. S., in October 1841, bought twenty bullocks at Peterborough fair, six of which were subsequently attacked with pleuro-pneumonia at different periods, varying from one to three weeks, after their arrival upon the premises. They were all observed to husk soon after being purchased; but this was considered by the owner of no importance.

Case 2.—In 1842, Mr. V. bought thirty-five Irish heifers at a large stock-market in the neighbourhood, most of which were shortly after attacked with disease of the lungs. Three died within a fortnight; several others were afterwards disposed of whilst in pretty good condition, and, on being opened, their lungs exhibited appearances of the disease.

Case 3.—A cow belonging to a poor man of this town, Cambridge, fell ill on October 13, 1844, of pleuro-pneumonia, and, after undergoing treatment for ten days, died. This cow was purchased a short time previously at St. Ives' market.

Case 4.—Mr. H. bought thirty head of stock at Stamford fair, on November 18, 1844. They were driven home to a distance of about thirty miles: shortly after they were all observed to cough, some more so than others. Three died.

Case 5.—Mr. F., a gentleman who grazes a considerable number of cattle, purchased in the autumn of 1844 a herd of three-year-old steers at a fair in the north of England: several of them were observed to husk at the time, and died soon after. This was the first appearance of the disease on this gentleman's farm; and for the succeeding two years the loss amongst his cattle from the same cause has been immense.

Case 6.—About the middle of July 1846, Mr. J. purchased ten

heifers at St. Ives' market: all coughed, and four died of the disease shortly afterwards.

Case 7.—In the same month and year, Mr. I. bought twenty cows at a fair, eight of which were attacked with the disease soon after, and died.

Case 8.—Mr. S. lost three cows out of ten, bought at the same place, and about the same period, as the former.

Case 9.—Mr. P. bought, in the beginning of November 1846, six heifers at a market close by. Two were immediately observed to be affected with the epizootic pleura-pneumonia, and both died within a fortnight after being purchased.

Case 10.—Mr. D. bought, in November 1847, twelve steers at Bury market: all husked at the time. One died on December 2d of the disorder; and several of the others, looking thin and weak, were sent back again on the 21st to the same place to be sold: they were afterwards traced to the person who had bought them, and three more were ascertained to have died.

Case 11.—In March 1843, Mr. S. requested my attendance upon a calf six months old, that was labouring under the disease, he having previously lost twenty-three by the epizootic pleuro-pneumonia. The disease on this farm originated in some cattle purchased at Peterborough fair, and spread so rapidly that this gentleman was obliged to sell all the remainder of his stock, fearing he should lose a great many more. The average quantity kept was from eighty to an hundred.

Case 12.—Mr. W., dairyman of this town, Cambridge, who keeps on an average twelve cows, lost two during the spring of 1845, and six more during the latter end of the same year and commencement of the following.

Case 13.—Mr. A., a dairyman of the same place, kept up a dairy of ten cows during the period between June and December of 1846. Four died; and several others, which were afterwards attacked with the disease, were disposed of, and fresh ones bought in, to keep up his usual number. This person has generally been in the habit of supplying any deficiency in his usual number from dealers.

Case 14.—Mr. M., between November 13, 1846, and February 15, 1847, had three steers and two cows attacked with pleuro-pneumonia, out of a stock of twelve steers and six cows. One of the steers and both cows died. The twelve steers had been purchased at a market some short time before, and were turned into the same yard with the six cows.

Case 15.—Mr. S., a farmer, in October 1847, bought two cows, one of a cattle-dealer close by, and the others at St. Ives' market. Shortly after this he allowed a friend to turn two buds (recently bought out of a drove) into the same pasture with them: the buds

were observed to have a cough from the first, and about a fortnight after one died of pleuro-pneumonia. The cow bought of the dealer soon after died of the same disease. And on the 9th of January, 1848, the other cow was taken, and died on the 28th of the same month.

Case 16.—Mr. S. purchased in 1845 ten head of stock at a fair: all were observed to cough or husk more or less. Shortly afterwards six became decidedly affected with the disease, and five died. This is a very healthy and well conducted farm, containing, on an average, from twenty to thirty head of cattle.

Case 17.—In September 1844, Mr. F. summoned us to attend some young home-bred stock, which he had reason to think were suffering from the epizootic pleuro-pneumonia. They were confined in a close and ill-ventilated hovel. All recovered. The manner in which they first became affected is not known.

Case 18.—In March 1844, Mr. F., milkman, of Cambridge, had nine cows, and in the same month they were all observed to have a cough; and one, which eight months before he had purchased of a neighbour, became attacked with the disease, and, thinking it to be the "garget," waited three days before we were called in. She was attended for three weeks, and died. About a fortnight before Christmas in the same year, he bought another cow of a jobber at St. Ives' market, which also died of the same disease in six weeks. A few days after this he bought two more at Bury market: one was taken, and died in three weeks, and the other within a month. He then purchased two more cows of a person about a quarter of a mile distant, and, fearing if these were taken home they might catch the disease, he requested that he might milk and graze them on the person's premises, which had hitherto escaped the malady. This was readily granted; but they, too, became affected with the disorder, and died, after being treated for about a fortnight. Several others on the same premises were immediately attacked; some died, and some were slaughtered. Between this period and January 1848, eight more have died of the same disorder. Mr. Fletcher's premises stand in a low and confined locality, and until very recently had never been drained.

Case 19.—In the latter end of August 1846, Mr. W., who farms between four and five hundred acres of land in a low marshy district, situate on the banks of the Cam, purchased nine steers at an extensive stock-market in the neighbourhood, all of which were observed to cough shortly afterwards. He kept them for about a month, and, perceiving no improvement, exchanged them for nine heifers with the same dealer. These were also noticed to cough in a few days; and on the 12th of October one of them died of confirmed pleuro-pneumonia. All the remainder were more or less affected; and, after having been removed into a warm

yard and undergone treatment, recovered, with the exception of one, which lingered for some time, and ultimately died a mere skeleton. Four milch cows on the same farm were carefully kept apart from the young stock, and escaped the malady.

Case 20.—Mr. F., during the years 1845 and 1846, sustained a loss of nearly one thousand pounds' worth of stock from the epizootic pleuro-pneumonia. Those that were in tolerable condition were disposed of, and slaughtered immediately on the first decisive symptoms of the disease presenting themselves, thus affording us many opportunities of observing the state of the lungs in this earlier stage of the disease. Nothing satisfactory could be obtained as to the origin of the disease on this gentleman's farm.

Case 21.—Mrs. R., cowkeeper, of Cambridge, who keeps ten cows, lost three out of four which were attacked, at various periods between May 4 and July 21, 1847, with pleuro-pneumonia. The disease in this instance was supposed to have arisen spontaneously.

Case 22.—Mr. T., a large farmer, purchased, about the middle of 1844, nine heifers of a dealer, one of which was shortly afterwards attacked with the disease, and, after being attended for some time, became considerably reduced, and was sold. The remaining eight were disposed of to a dealer just previous to the before-mentioned one becoming affected, four of which were ascertained to have died shortly after. This was the commencement of the disorder upon this farm, and has since made great havoc amongst the cattle. Mr. Toller generally keeps from eighty to an hundred head of stock on the three farms of which he is proprietor; and during the last three years he has repeatedly been obliged to dispose of cows and young stock at a very great disadvantage, on account of their becoming diseased. The farms are all contiguous, so that the cattle have free communication with each other. Several were also affected with the vesicular epizootic at the same time, and recovered.

Case 23.—Mr. S. bought forty Irish beasts on December 3, 1846, at a market. Soon after, they all became affected with the vesicular disease, and recovered, except four, which were attacked with pleuro-pneumonia. Two were sold, and slaughtered; the others recovered.

Case 24.—Mr. M., of Cambridge, purchased two heifers at St. Ives' market in the beginning of May 1847, one of which was observed to cough at the time, and on the 18th of the same month was sold and slaughtered, after being treated for nearly a week. The other was attacked with the vesicular epizootic at the same time, and soon recovered.

Case 25.—In the month of November 1841, Mr. J. purchased, at Stamford fair, fifty-eight head of Irish cattle, and, soon after being brought home, most of them were observed to have a dry husking

cough. Three, upon examination, were found to be suffering from decided disease of the chest, and died some short time after; and, from the supposition that the remainder were labouring under the same disease, but in an earlier stage, they were immediately bled and physicked, and finally recovered.

Case 26.—In the autumn of 1846, Mr. S. purchased twenty stores at a distant fair, all of which coughed. One died of pleuro-pneumonia; the others were bled and physicked, and recovered.

Case 27.—Mr. C., in the early part of November 1846, purchased, at St. Ives' market, twenty steers: two were soon after attacked with pleuro-pneumonia, and died. After this several others were affected with the disease, and, upon being bled and physicked, recovered.

Case 28.—Mr. S., a dairyman of Cambridge, who keeps thirty cows, lost, during 1847 and the two previous years, twenty-seven cows and a bull, in consequence of being attacked with the disease: since which time all his cows have been setoned, and no deaths have occurred.

Case 29.—Mr. J. purchased, in the month of November 1846, twenty Scotch beasts at Stamford fair. Soon after their arrival at home they were observed to cough, and were turned into a yard with five cows. Between this time and the middle of December of the same year, seven of the young stock died, during which period the five cows became affected. Three died: all the remainder, both cows and young stock, recovered after being bled, physicked, and setoned.

Case 30.—Mr. H., of Cambridge, on September 18, 1847, bought, at the market in the same place, two buds out of a drove, which he turned into a paddock. On the following day both were observed to cough: one lived till the 30th, when it died; the other recovered under treatment.

Case 31.—Mr. C., of the same place, had four cows out of eight attacked with the same disease, between April 13 and July 28, 1847. Three were disposed of, and the other recovered under treatment.

Case 32.—Mr. R., of Cambridge, had five cows in July 1846, when three became attacked with pleuro-pneumonia. Two died, and the other recovered under treatment, but slipped calf shortly after, as did several others in the preceding cases.

Case 33.—Mr. F., of Cambridge, purchased, at the latter end of October 1847, four steers at St. Ives' market, which were noticed by the steward to husk from their first appearance on the premises; and on November 19, observing that one was ailing more than the rest, it was treated for a few days without effect, and then sold. Between this period and January 3, 1848, two more were attacked in the same manner: one recovered, and the other was disposed of.

THE VETERINARIAN, JULY 1, 1850.

Ne quid falsi dicere audeat, ne quid veri non audeat.—Cicero.

So lengthy run our communications for this month that we find we must compress any remarks we may have to make into as small a compass as possible. Our subscribers will be glad to see Mr. Haycock again in the field of practical inquiry: they will likewise hail with pleasure Mr. Smith's entrance on a similar research. Labourers such as these furnish the materials out of which veterinary pathology in time will raise a scientific structure not unworthy of that art which cannot be said to have arrived at the degree of perfection expected of it until the day when it can fully urge its claims, intellectual as well as legal, to a seat by the side of human medicine. The only sure road to this, on the one hand, is along the step by step practical investigation which Mr. Haycock has from the first been pursuing; while, on the other hand, we shall in the course of time obtain all we may desire through the instrumentality of the Charter. Led by its sister Science on one side, and supported by the strong arm of the Law on the other, the veterinary art, taught and prosecuted as it deserves to be, cannot fail, in the end, to arrive at the goal of its fullest anticipations.

We hear from almost all quarters of "influenza" fearfully raging again among horses. It nowise appears to differ in its type and tendency from similar visitations in former years. The throat is the seat of soreness and suffering: the disease thence, in some, creeping down into the bronchial tubes and alighting upon the thoracic membranes; while in others it vents its violence chiefly in the head, either through continuous profuse discharges from the nose, or a critical outburst of an abscess in the throat. Now and then strangles come on, and, in some instances, a tedious and troublesome nasal gleet remains; cough being the usual attendant all through the complaint.

We would offer a word in regard to treatment, and that must

be in a *negative* sense. Blood-letting, after full and fair trial, we have set our faces against. We feel quite sure that more horses, with this disease, have been killed than were ever saved by it. Indeed, we question its utility or admissibility in any case partaking of the nature of what we all understand by *influenza*.

PROCEEDINGS OF THE COUNCIL OF THE ROYAL COLLEGE OF VETERINARY SURGEONS.

Special Meeting, held May 28, 1850.

THE Council were assembled, on this occasion, in pursuance of the instructions of the Charter, for the purpose of electing a President, six Vice-Presidents, and a Secretary, for the (sessional) year ensuing.

THE MEMBERS PRESENT were, Messrs. Henderson, Ernes, Pritchard, Godwin, Cherry, senior, Morton, W. C. Spooner, Wilkinson, Braby, Peech, Field, King, Simonds, Withers, J. Turner, Robinson, Goodwin, Sylvester, Percivall, and the *(ci-devant)* Secretary. In the void created by there being no President, Mr. Robinson, the senior member present, and who had presided in the absence of Mr. T. Turner at the General Meeting, was requested to take the Chair.

The minutes of the last meeting having been read and confirmed,

The Chairman announced that their first business was to elect a President, the College being at that moment without one. He said it had been the custom to nominate some person or persons to fill the office.

To this (nomination) it was objected that such a course might lead to favoured predilection; and at the same time it was aptly remarked that *custom* afforded a precedent for their guidance in as far only as it had been, on former occasions, found to be a good or a bad custom. It was feared also that nomination might give rise to some discussion of the respective merits of individuals proposed, and that such might possibly lead to some unpalatable remarks. Under these circumstances, it was decided by the majority of the members that no nomination should take place.

It was asked, at this time, whether Mr. Thomas Turner's health was such as to enable him to resume the Chair, in case of his re-election; to which his brother, Mr. James Turner, replied, that he was happy to say it was, and that he would with pleasure again undertake the duties of Chairman, should the Council be pleased to elect him. The balloting papers were then handed round, and,

being collected and examined, declared the election to have again fallen on Mr. Thomas Turner.

THE ELECTION OF SIX VICE-PRESIDENTS, to replace those officially defunct, was the next duty devolving upon the Council. There appeared, on this occasion, a decided feeling that the choice should fall on the oldest, most eminent, and most respected members of the profession, the names of most of whom were, by a member present, proclaimed to the Council, to guide them in their selection; with simply the reservations, that no candidate for Vice-President should be a member of Council; and that no person ought to gain admission, thereby, into the Council who had already been a Vice-President, but never had attended a meeting. This being understood and generally acquiesced in, the ballot was proceeded with; when the election was announced by the Chairman to have fallen on

Messrs. Charles Marshall, London.
John Kent, Bristol.
Arthur Cherry, London.
William M'Kenna, Belfast.
William Ernes, London.
James Tindal, Glasgow.

Mr. GABRIEL was unanimously re-elected Secretary.

OBITUARY.

DEATH OF MR. MOSS.

ON the 10th ult., Mr. Lewis held an inquest at the Coach and Horses, touching the death of James Moss, veterinary surgeon, which took place under somewhat peculiar circumstances. The deceased—whose wife was delivered of her third child only a few weeks since—was rapidly establishing himself in a lucrative business. It appeared from the evidence of Mr. J. M. Fisher, builder, residing at Plaistow, that the deceased had been called in by Mr. Batty to operate on two horses which had been presented to the latter by the Queen. He picked a pimple near his mouth after the operation, without taking the precaution of washing his hands, never thinking of the virus attending the operation. On the Friday before his death, Mr. Fisher accompanied him in a light cart to Blackwall, and on the way he complained of shooting pains in his head, and witness brought him back to Plaistow. On the way home he said, "I am a dead man. I scratched a pimple on my face after operating on the horse at Batty's, and, if the poison has entered, I shall never re-

cover." Dr. Beale, who had attended the deceased's wife during her confinement, saw him with his face bandaged up on Friday the 3d, and, perceiving that his mouth was in a bad state, ordered it to be poulticed. Next morning he became worse, when witness ordered leeches, and called in Mr. Adams. The inflammation went on increasing at a frightful rate, and he died on the following Tuesday. The immediate cause of death was inflammation of the windpipe, and the deceased had stated to witness that he had accidentally inoculated himself with a *mineral* (animal?) poison after operating on two horses presented by the Queen to Mr. Batty. Witness was perfectly satisfied that death was occasioned by inflammation of the windpipe. The jury returned a verdict—"That the deceased died from inflammation of the throat, not resulting from violence."—*The Weekly Times, May* 12, 1850.

MISCELLANEA.

Veterinary Operation under Chloroform.

Recently, the painful operation of firing was performed on a horse in the possession of J. G. Bridge, Esq., of Piddletrenthide. From a desire to avoid unnecessary torture to the animal, it was decided that it should be submitted to the influence of chloroform. The following account may be interesting:—

The horse having been thrown, the india-rubber nose-piece, charged with two ounces of chloroform, was applied to the nostrils, and the effect was almost instantaneous. In two minutes the horse became insensible, and the firing was concluded in twenty minutes, without any plunging or symptoms of pain (the chloroform being re-applied on any appearance of returning animation). The hobbles being removed, three minutes elapsed before the horse awoke; when he stood up and commenced eating the grass in the paddock, perfectly cool, without those symptoms of excitement and distress which usually attend that painful treatment.

Chloroform.

Mr. Glover, of York, lately operated upon a dog for a very peculiar complaint, viz., warts in the throat and mouth, which had rendered the animal incapable of taking its food. He administered chloroform to it, and skilfully removed upwards of two hundred warts from its throat and mouth. The dog is now quite recovered.

THE

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CONTRIBUTIONS TO THE PATHOLOGY AND PRACTICE OF VETERINARY MEDICINE.

By W. HAYCOCK, *Veterinary Surgeon,*

(Member of the Veterinary College, Edinburgh)

King Street, Huddersfield.

EIGHTH CONTRIBUTION.

Abscess of the Liver—Abscess of the Trachea—Hemorrhage of the Liver—Rupture of the Stomach, &c.

CASE I.

February 27th, 1847.—I WAS requested, about ten o'clock A.M., to attend upon a cow, the property of a small farmer residing about two miles from Huddersfield.

History, &c.—The cow I am called to see is of the short-horned breed, of a red and white colour, and a copious yielder of milk: she has been the property of her present owner about two years, during which period her health and condition have always been good. Last night she was fed as usual, and left at the usual hour to all appearance as well as could be desired. On entering the cow-house this morning she was discovered to be very unwell, and a messenger was despatched to request my immediate attendance.

Present State.

1. The limbs, the ears, and the nose, are cold.
2. Pulse 60 per minute, and respirations 15 do.
3. Every time the animal performs an act of respiration a short grunt is emitted; the respiratory murmur throughout the lungs is perfectly normal.
4. The paunch is inflated with gas, but not to any very considerable extent.
5. Once or twice during the morning the cow has lain down, but, when down, she lies quiet.

6. The cow now and then drops a small portion of dry-looking dung: she has not been seen to urinate since last night.

7. The hair and skin generally present a very dry unhealthy aspect, and she stands with her spine a little arched.

8. She refuses every kind of food, but has drunk, a short time ago, about six quarts of gruel.

Treatment.—I had her warmly clothed, and well littered with clean straw. Gave the following in three quarts of warm water, in which was dissolved eight ounces of treacle:—

℞ Magnesiæ sulph. ..... xij
Pulv. zingib. ..... ʒij
Sodæ carbonat. ..... ʒij

To be at times liberally supplied with warm water or warm gruel; to have also a little bran mash, if she will take it.

Eight o'clock, P.M.—The owner waited upon me to say that the cow remained much in the same state as when I saw her in the forenoon; that she had drunk freely once or twice of gruel, and had partaken of a very small portion of mash; that, to-night, she had given considerably less milk than in the morning; and that, upon the whole, he considered the paunch to be more inflated with gas. To continue the dietary, and to have the following in a pint of water:—

℞ Spts. nitr. ..... ʒjss
Ammoniæ ..... ʒij

28*th*, *Ten o'clock*, A.M.—Much the same in every respect as when I saw her yesterday morning: she has eaten a small portion of mash about an hour ago. She will not partake of warm water, and has not dunged at all during the night. Paunch not so inflated, neither is the spine arched so much as yesterday. I ordered

℞ Magnesiæ sulph. ..... ʒviij
Sodæ carbonat ..... ʒij
Spts. of nitr. ..... ʒij
Warm water ..... 2 quarts

The mashes, warm water or gruel, to be given as before.

Seven o'clock, P.M.—The owner came to tell me that his cow was dead; that she had died both suddenly and unexpectedly; that the medicine had begun to operate about twelve o'clock, after which she appeared much improved; that about five o'clock she began to lie down and exhibit other symptoms of abdominal pain, such as paddling of the hind limbs, looking at her side, &c.; and that about six o'clock she died, without displaying any symptoms of a very severe nature. I must confess that I was greatly surprised to learn the above respecting my patient: I had not the least

anticipation of any such result; and resolved, if possible, to discover the cause.

Examination sixteen Hours after Death.—Abdomen: On exposing the abdominal cavity I found the whole of the peritoneum in a very diseased state; patches of gangrene, of about the size of my two hands, were present here and there, also layers of lymph, apparently of not very recent formation. The peritoneal membrane investing the small intestines was in the worst state; the cavity contained a quantity of muddy-looking serum, in which floated masses of lymph. The liver was greatly changed; it was pale or clay-coloured, and granular: the whole of its convex surface was adherent to the peritoneum, diaphragm, &c., which, upon being torn away, liberated an immense quantity of thick cream-like pus. The purulent matter emitted no peculiar smell, and it appeared of uniform density. A portion of the liver was also adherent to the false ribs, between which the liver at that part presented a very large cavity; which cavity was completely filled with the same purulent deposit: upon the whole, there was not less of this deposit than three quarts. The maniplus was filled to excess with food in a very dry condition; so dry, indeed, that if a portion was worked between the thumb and fingers it disappeared as dust: every part and every corner of the organ was thus filled with dry ingesta. The contents of the other stomachs were in a very proper state, as were also the contents of the intestines. The uterus contained a fœtus about four months old. The kidneys, the ureters, and the bladder, were all normal.

Organs of the Chest.—The lungs were very healthy, and contained but little blood. The pericardium was covered with blotches of a deep blue or purple colour, but the membrane itself was firm in every part. The cavities of the heart, its muscular substance, and its large vessels, were all normal.

Case II.—*Abscess of the Trachea.*

March 14th, 1847.—I was requested, about seven o'clock P.M., to attend upon a horse, the property of Mr. Isaac Sales, a farmer, residing at Rastrick, a village situated about four miles north of Huddersfield.

History, &c.—The animal I am called to is of a dark brown colour, of the cob breed; known to be at least seventeen years old; stands exactly fourteen hands two inches high; and has been the property of his present owner for the last ten years, during which period he has never suffered until very recently from disease of any kind; on the contrary, he is noted both as being a very fast trotter, and as possessing powers of extraordinary endurance. About

twelve months ago the animal became affected with cough, which was not violent; and, at times, the owner states that the horse would be for a day or two without coughing, then he would cough for several times in succession. The cough itself was hard and dry sounding, and it did not appear to be excited from any particular cause. Three months ago it became more frequent and violent, but the owner neglected to apply for any relief, from the supposition that the cough arose, in a great measure, from old age, and that the animal was about to lose his wind.

Two hours ago the horse in question was turned out of the stable along with two others to drink what water he chose out of a trough in the yard, and soon after drinking the animal began to breathe with great violence, and stagger in his walk. Several remedies of a simple nature were had recourse to, but without avail: the case got worse; when, at last, the owner sent off a messenger to request my immediate attendance.

Present State.

1. Pulse 74 per minute, full and strong; the impulse of the heart is also very powerful against the ribs of the left side.

2. The respirations are 40 per minute; the ribs heave violently, and the inspiratory act is attended with a suppressed screaming noise.

3. On applying my ear along the course of the trachea, a loud rasping noise is present: this noise is of the same intensity in every part of the tube; at least, the most careful examination I could make failed to detect any difference.

4. The respiratory murmur throughout the chest on both sides is subdued, or of a muffled character.

5. The animal stands stiffly in the stall; the limbs are placed wide apart; the nose is extended, and the nostrils are widely expanded.

6. The surface of the body, generally, is covered with a cold clammy perspiration.

7. Occasionally the animal brings his nose close to his left side, and regards the side anxiously.

8. The eyes are staring, blood-shot, and have a peculiar wild look.

Treatment.—Gave the following in a pint of water,

℞ Spt. nitri ..... ℥ij
Ammoniæ..... ℥ij

In about an hour after the medicine was given, the most violent of the symptoms had subsided considerably. In the mean time the animal was wisped dry, and warmly clothed. At ten o'clock I

directed a bran mash to be given, which he seemed to enjoy, and soon afterwards I left him in what I considered a fair state of recovery.

15*th, Ten o'clock*, A.M.—Considerably improved; pulse 46, and respirations 15 per minute. A slight heaving motion is still present with the ribs; he has not lain down, eats very well, has dunged and urinated freely: cough somewhat troublesome occasionally. The following to be mixed with lini pulv. beat into a mass with palm oil, and afterwards divided into six balls, one of which is to be given to the animal every morning:—

℞ Potass. nitratis..... ʒiss
Camphor. ..... ʒvj
Antim. tart. ..... ʒj

I also directed the owner to feed the horse for some days upon soft food, consisting of bran, boiled oats and linseed, and, as he was not very busy with farm work, to allow the animal all the rest he could. I did not hear any thing more of my patient until the morning of the 30th, or fifteen days afterwards; when a messenger came, about eleven o'clock, to again request my attendance: he told me that the horse had rested from the 15th until this morning, when he was put to a little light work; and that, after working about half-an-hour, he suddenly commenced in the old way, and he was afraid that the horse would be dead before I could possibly get there, to render any assistance. I found his state, upon my arrival, to be precisely similar to the state which I have previously detailed: this time, however, every means which I resorted to failed to yield any benefit. The animal died about eight o'clock in the evening.

Examination fifteen Hours after Death. Digestive Organs.—The mouth and its contents, the œsophagus, the stomach, the small and large intestines, were all perfectly healthy in every part. The liver was firm, and good in colour; the kidneys, the ureters, and the bladder, were likewise perfectly healthy.

Organs of the Chest, &c.—The lungs were next very carefully examined, but every portion of the pulmonary structure was found to be beautifully perfect; the organs were very much congested, but nothing more. I next slit the trachea superiorly along its whole length, or from the larynx to its bifurcation. The tube of the trachea contained large masses of thick tenacious mucus, and a great quantity of frothy spume; the bronchial tubes contained masses of the same substance: it was in examining these mucous masses that I accidentally perceived a globule, as it were, of purulent matter lying upon the mucous membrane of the trachea, a little above where the trachea bifurcated; and upon washing the part, and feeling upon the surface of the membrane, I detected a distinct fluctuation under the finger. To remove the superior extremity of the trachea, and to close the ring of the lower portion, was the

work of a moment; when I found, upon looking down into the tube itself, that it was more than three parts filled with what appeared to be a circumscribed egg-shaped tumour, which, on cutting down upon and puncturing, I found to be filled with very thick whitish purulent matter. The mucous membrane forming the roof of the tumour was healthy, and unchanged in its natural light pink colour; the quantity of matter liberated would at least be three ounces by measure. The cartilages upon which this purulent matter rested were very much thickened, and, upon cutting into them, all I could observe were three black patches, situated within their centre. The heart, and the large vessels in immediate connexion with it, were all healthy, and, when divested of its fat and large vessels, weighed exactly eight pounds eight ounces avoirdupois. I also examined the brain and the spinal cord, and found their tissues in a very healthy state.

CASE III.—*Hemorrhage of the Liver, Disease of the Heart, &c.*

September 25th, 1847 —I was requested, about ten o'clolock, A.M., to attend upon a horse, the property of Messrs. Nowell and Hattersley, railway contractors, in this town.

History, &c.—The animal is of a grey colour, of the very heavy draught breed; stands sixteen hands two inches high; is considered, upon good data, to be about ten years of age, and has been the property of his present owners between three and four years, during which period he has always been well kept and well worked. For the last fifteen months the animal has been employed at Huddersfield, upon the line of railway which is making between here and Manchester.

The horse is affected with a cough, which is hard, dry, and loud-sounding; and, in addition, is considered to be also affected in his wind. I have at various times given him balls to remedy these defects, but without avail, save in a temporary manner. On several occasions he has been attacked with fits of vertigo, which have manifested themselves very suddenly, particularly when made to walk quick, if journeying up hill. I cannot ascertain how long the animal has thus been subject to vertigo; but the horsekeeper says, that, about two years and a half ago, this horse was employed for some weeks working in deep water; that he had a very severe attack of inflammation of the lungs in consequence, from which resulted the fits, the cough, and the affected wind. During the winter I attended him for an attack of epidemic catarrh; and also, on two occasions since, for colic. This morning he did not eat well, and, when taken to work, he appeared dull and blundering in his movements. After working about an hour, he became so weak as to be incapable of further exertion, and the

driver returned home with him. He had scarcely got the animal into the stable, when he commenced very greedily eating hay, and almost immediately afterwards he began to breathe with great violence. I was now requested to attend.

Present State.

1. Pulse 84 per minute, and jerking.
2. The respirations are 38 per minute; the animal breathes both through his mouth and nostrils; the neck is extended, nostrils expanded, and the mouth wide open.
3. The inspiratory act is attended with a screaming noise.
4. The ear, applied along the whole length of the trachea, detects also a harsh rasping noise.
5. Throughout the chest this rasping noise is intermingled with a loud blowing noise.
6. The ribs of the animal work with a violent heaving motion.
7. The mucous membrane of the nose is of a purple or leaden colour.
8. A frothy kind of spume issues from the mouth and nostrils in great abundance.
9. At times the animal attempts to cough, but, after a straining effort, it terminates instead in a kind of dry smothered puffing sound.
10. Occasionally, he turns his nose close to the left side of the chest, and regards the side anxiously.
11. The sides of the neck, sides, and inferior parts of the abdomen, the loins, thighs, head, and fore limbs, are covered with a profuse clammy perspiration.

Treatment, &c.—Various remedies were had recourse to, such as spirits of nitre, ammonia, camphor, turpentine, opium, &c., but without avail: he continued much in the same condition for many hours, until, in fact, about eleven o'clock, when he dropped and died.

Examination ten Hours after Death. Digestive Organs.*—The mouth and its contents were all healthy, also the œsophagus, stomach, small and large intestines. The stomach contained but very little food, and that was in a fluid condition: in the midst of this fluid were floating three round worms of an immense size. The peritoneum was normal throughout.

Urinary Organs.—The kidneys were very much softened in every part; the left kidney, in fact, was nearly pulpy. The ureters and the bladder were normal.

* During the post-mortem examination of this case, I was kindly assisted by Mr. Howell, V.S., now resident, I believe, in Rochdale.

Organs of Respiration.—The nasal passages were healthy; the larynx was covered with mucous and frothy spume; the mucous membrane of the organ exhibited patches of a scarlet red colour, but the membrane was not smaller, nor yet softened in any part. The trachea contained masses of mucous and frothy spume. The lower part of the mucous membrane of the trachea, and the membrane covering the larger of the bronchial tubes, exhibited larger patches of red, and of a darker colour, than those peculiar to the membrane of the larynx. The coloured parts were also thickened and softened: in odd places the colour passed into a purple and green colour. The substance of the pulmonary structures did not exhibit any trace of very recent disease. About five inches in depth of the lowest portion of each lung was perfectly solid, and impervious to air; a considerable force was required to push the knife into these portions: in fact, cutting it was like cutting cartilaginous tissue. The pleura costalis was perfectly healthy.

Organs of Circulation.—The pericardium contained about sixteen ounces, by measure, of clear serum. The internal surface of the membrane was perfectly smooth, and unchanged in every part. The heart, when dissected of its fat and separated from its large vessels, weighed exactly ten pounds eight ounces avoirdupois. The thickness of the muscular wall of its systemic ventricle was exactly two inches and a quarter; while the thickness of the muscular wall of its plumonic ventricle was only one inch; both ventricles contained large clots of fibrin. One of the tricuspid valves of the right ventricle was greatly thickened for about an inch, or a little more, in circumference; and this thickened portion contained several minute granular points, or little elevations, which were situated on the outer surface of the valve: other points, of a precisely similar character, were situated here and there over the valve, and also on the surface of three of the little cordæ tendineæ; the other valves were all healthy; the same also with respect to the large arteries in connexion with the heart. The principal veins comprising the anterior and posterior venæ cavæ, portal vein, abdominal vein, vena azygos, and jugulars, were all filled with very black fluid blood, in which floated clots of coagulated fibrin.

Hepatic System.—The liver, when exposed to view, appeared of a most enormous size: the posterior or concave surface of the right lobe presented a curious appearance; its peritoneal covering, over a surface of seven or eight inches, was detached from the substance of the organ below it. The liver, in fact, was emphysematous, as, the moment I pierced the raised portion with the point of a knife, some air became immediately liberated, and the raised part collapsed. On removing the liver from its attachments, I was necessitated to use as little force as possible, otherwise its whole

substance would have fallen to pieces. At first sight, I thought the entire mass was granulated blood; but closer inspection proved it to be otherwise. I cannot, perhaps, give the reader a more accurate idea of the state of this organ, than by telling him to suppose a large quantity of delicate grown moss collected into a round heap, and this round heap to be saturated with blood; which blood, instead of adhering in clots, he must suppose adhering in granules, so as more to resemble so much red-coloured sand than any thing I could compare it to, and he will obtain, perhaps, the clearest notion of the state of the organ that I can give. The entire mass was invested in a membrane the most delicate imaginable; so delicate, indeed, that the marvel was how it had retained its integrity so long. The moss-like substance which I have named, when thoroughly cleansed from blood, I found to consist entirely of what Mr. Kiernan calls the lobules of the liver. I washed portions with great care, one of which I preserved in spirit, and have in my possession*. The weight of the entire mass was thirty-one pounds twelve ounces. The spleen was perfectly healthy, and scarcely contained any blood.

Muscular System, &c.—The muscles of animal life were very much softened, which softening was general; they were also pale in colour. The brain was likewise in a similar state in both respects.

CASE IV.—*Rupture of the Stomach, &c.*

July 12th, 1848.—I was requested, about seven o'clock, A.M. to attend a horse, the property of James North, Esq., of King's Mills, Huddersfield.

History, &c.—The horse in question is of the light draught breed; of a dark brown colour; stands exactly fifteen hands two inches high; is known to be fifteen years of age at the least, and has been in the possession of Mr. North the last seven years; during which period he has always been a remarkably healthy animal, and could endure almost any amount of fatigue. His work is always of a heavy, laborious kind, yet his limbs are entirely free from bursal enlargements or swellings of any kind; in short, any person who did not know the horse, would, on seeing him, judge him to be about six or eight years of age.

Yesterday his work was heavy, and it was late when he was brought to his stable. After being made secure, he was fed with an extra allowance of food, consisting principally of bran, meal seeds, split beans, crushed oats and hay. This morning, when his

* If the reader possesses "Carpenter's Manual of Physiology," let him open it, and turn to page 417; and he will see a diagram of the lobules.

driver entered the stable, a little before six o'clock, the horse appeared well; he drank freely of water, and, when the man was in the act of feeding him with corn, the animal became suddenly unwell. He manifested symptoms of abdominal pain; he leaned against the sides of the stall, and rested his head in the manger; he was led out of doors, and walked about, while a messenger was dispatched to request my immediate attendance.

Present State.

1. Pulse 46, and respirations 16 per minute.
2. The eyes of the animal have a very peculiar, dull, inanimate aspect.
3. When he is allowed to stand still, he begins to crouch with the hind limbs, and maintains the crouched position for a considerable time.
4. He perspires profusely about the head, the breast, and the left side, and the body generally feels clammy.
5. Occasionally he stretches himself out, as though for the purpose of urinating.
6. If he is made to walk out of the box, he moves his tail violently from side to side.
7. He sometimes lies down, and occasionally rolls over.
8. He rises upon his feet, and walks slowly round and round the box; then crouches again, and appears as though he desired to lie down, but does not.
9 He stops when wandering round, and leans lightly with his body against the wall, with his chin upon the edge of the manger.

Treatment.—I administered the common colic draught, consisting of oil, turpentine, opium, ammonia, and water; gave an enema of warm water; and left instructions for the animal to be kept as quiet as possible.

Ten o'clock, A.M.—No improvement; worse, in fact, if anything. Pulse 55, strong and bounding; perspires more profusely, and lays him down more frequently, but is not violent when down. I immediately had recourse to bleeding, took away about five quarts of blood, and then gave the following in a drench :—

℞ Aloes Barb..... ℥vj
Sodæ carbonat ..... ℥ij
Tinct. opii ..... ℥ij
Spt. nitri..... ℥j
Aquæ..... ℥vj

I caused also a large quantity of hot water to be brought into the stable, and the animal was fomented with it for at least an hour, at the end of which time he appeared somewhat relieved.

Having to go a considerable distance into the country, I left my patient about eleven o'clock, and did not return until five hours afterwards.

Four o'clock, P.M.—During the time I have been away, he has urinated twice very freely, but in every other respect he is much the same. He perspires more; he wanders round and round the box as usual; crouches; then appears as though he was suddenly relieved from his pain; he stands perfectly still; hangs the head down, or rests upon the manger; and closes the eyes as though in a kind of stupor. If forced away from the place, he walks firmly, but bears his head near to the ground: when brought again into the box, he leans himself against the wall, and again doses, and if he wakens up, it is only to commence anew walking round the box. Pulse 84, and feeble, and respiration 32 per minute. The limbs are very cold, and they have a fine glossy appearance. Repeat medicine, and give an enema of tobacco smoke; after which the abdomen was again fomented, and the animal was back-raked.

Ten o'clock, P.M.—Still the same, or, if anything, worse; stupor more intense, and the breathing is more laborious; pulse 90, and respirations 36. Left him for the night, with directions for some one to attend upon him during the night.

13*th, Seven o'clock*, A.M.—On arriving at the stable I found my patient dead: he had died about six o'clock, in a very quiet manner.

Examination three Hours after Death—Digestive Organs, &c.: The mouth and its contents were healthy On opening the abdomen, a quantity of loose fluid was at once perceived in its cavity; the quantity could not, I think, be less than six or eight quarts. The peritoneum was very healthy in appearance, being of the glistening grey colour so characteristic of healthy peritoneum. On removing the intestines, we came upon a large quantity of food in a half digested state; it lay principally in the left hand corner of the cavity, and in close contiguity with the diaphragm and the liver: it consisted of split beans, chaff, bran, and ground oats, and, what is worthy of remark, the fluid in the cavity, which was of a pale yellow colour, contained little or no admixture of the loose solid food: both appeared to have remained distinct and apart. The intestines were all moderately full, with the exception of the rectum, which was empty. The stomach was ruptured the whole length of its great curvature; and its mucous membrane along the edges of the rent was highly injected. The peritoneal coat of the organ and its muscular coat were parallel in the direction of their rents; but from the greater elasticity of the former, it had shrunk about an inch and a half from the latter. The colour of the liver outwardly was pale, but, on cutting into its substance, I found it

to be remarkably healthy and firm throughout. Its weight was exactly nineteen pounds one ounce avoirdupois.

Organs of the Chest, &c.—The nasal passages, the larynx, trachea, bronchial tubes, and the lungs, were all beautifully healthy, and free from every trace of a diseased appearance. The large veins were filled with black semi-fluid blood, as also were both ventricles of the heart. Here and there I found intermixed some small portions of coagulated fibrin. The heart, when divested of its large vessels, fat, and other extern tissues, weighed nine pounds eight ounces avoirdupois, and, I should have stated, was firm and healthy in every respect.

Nervous System, &c.—I examined the great nervous centre very carefully, and also the muscles of animal life, but found nothing further of an abnormal nature.

Remarks.—The first case I consider one of chronic peritonitis in connexion with abscess of the liver. I remember having a similar case to this, which occurred in a very aged cow belonging to a person in this town; but, unfortunately, my notes respecting it are very deficient in matters of detail. In the case to which I allude, the disease first manifested its existence by the animal losing flesh, and in a short time afterwards the abdomen was discovered to very slowly increase in size generally: the animal was also affected with cough, and occasionally with diarrhœa, but not in either respect very severely. The cow did not receive much medical treatment, and, after being ill about four months, she died greatly emaciated, although her appetite remained pretty good till within a few days of her death.

It was by the merest chance that I happened to see her opened; and all the memoranda which I possess respecting the condition of the organs as displayed after death is simply as to the existence of an immense quantity of water in the abdominal cavity, in which floated large masses of putrid-looking lymph, and also that the peritoneum was almost gangrenous throughout. Such are all the memoranda in my possession respecting so interesting a case. That the case detailed in this contribution is, in part, one of chronic enteritis, I infer from the following facts: first, the liver was nearly disorganized, and the purulent matter which its remains enclosed, as it were, was destitute of effluvium, and the matter itself was also of one uniform density; two conditions of purulent matter which are not found except after being deposited for a considerable period. Secondly, if the peritoneal inflammation had first commenced when I was called to the case on the 27th instant, the changes discovered after death could not have been effected in so short a period, unless the disease had been intense; and had it been intense, symptoms of a very different nature, I should expect

would have been manifested. It is, however, beyond all question that the liver must have been affected for a considerable period; and even supposing that the peritoneum could have exhibited the changes which it did, from the operation of inflammation of so recent a date as two days, yet it is hardly likely that the liver would be affected with inflammation of such a destructive nature, without the disease communicating itself more extensively over the serous membrane alike investing it and the intestines.

At the time I was called to the case, I had not the most remote suspicion that the cow was diseased in the manner and to the extent she was. Another remarkable feature in the matter is, that the disease in the liver should have gone on in the manner and for the period which it did without producing such a change in the bilious secretion as to give some faint notice, at least, of its existence; but, no! the cow fed well, throve well, and yielded plenty of milk; at least so said the owner. Cases of this nature are given in Mr. Youatt's work on Cattle, which the reader will find by turning to page 460 of that book.

Case II, is one of a very uncommon character, and it is the only one of the kind which I ever met with in my own practice. When I first saw it, I believed the whole had arisen from the accidental admission of a foreign substance within the larynx or the trachea; but, in attentively considering the facts presented by it, I now conclude that the violent respiratory symptoms arose from spasm of the glottis, induced, most probably, by the abscess irritating some of the filaments of the recurrent nerve, which are more or less distributed throughout the tracheal structures. In all cases like the present, occurring as they do but rarely, great difficulty will, of necessity, be experienced in forming a satisfactory diagnosis. A close consideration, however, of the facts of the present case will probably enable the veterinary reader to gather a few hints which may prove worthy of remembrance hereafter, should any thing of the kind ever fall under his immediate attention.

In the first place, it shews the necessity of very minutely inquiring into the entire history of the matter; not only from its earliest commencement, but also every particular up to the very moment of seizure.

Secondly, the necessity also of very accurately noting the symptoms, particularly the character of the sounds, whether such sounds are limited to the larynx, to the trachea, or to the lungs, or whether they are alike common to all of these organs. It will be perceived, by reference to symptoms numbered 2, 3, and 4, respectively of this case, that, while a loud râle was present in the trachea, the respiratory murmur through the lungs was of a normal character; while from symptom 3 we have the tracheal râle not only very loud, but that the loudness was alike common

to the whole length of the tube. By the first of these conditions we learn that the obstruction existed either in the larynx or the trachea; and by the second condition, that, most probably, it existed in both: that it was in both, was proved by the facts discovered when the animal was dissected; and, now that we know this, the explanation of the entire phenomena may appear simple: but it must be borne in mind, that the simplicity of the explanation is only made apparent by the discovery of the cause from the facts brought to light after the animal's death. Most phenomena become simple when all the conditions of their production are once understood; it is the getting of this knowledge of conditions wherein the difficulty lies. Had I known the conditions which produced the phenomena in the present instance, the result, most certainly, would have been otherwise. If the reader has in his possession THE VETERINARIAN for 1843, let him turn to page 68 of that volume, and he will find a most interesting case, very similar in many respects to the present: it is given by Professor Dick, and will amply repay the trouble of perusing it. It is the only one of the kind, I believe, recorded for the last ten years; and it is the only one which the Professor had ever met with in his own practice up to the date of its publication.

The next in rotation is Case III, which I have entitled "Hæmorrhage of the Liver:" it presents many features of great interest to the veterinary pathologist. The liver, in this case, was in a very peculiar condition: it was not ruptured, but simply appeared as though the parenchyma of the organ had been first removed by absorption, and, in consequence, blood had become slowly and equally effused amongst its loosened lobules. The mode by which such a change would occur we can readily perceive. The lungs were diseased, great portions of their substance being, in fact, solid, and impervious alike to blood and air; from which state a ready solution is afforded to the change in the structures of both the liver and the heart.

Professor Dick states, that permanent disease of the lungs speedily gives rise to organic disease of the liver, a fact which experience amply testifies: the intimate functional relation which exists between these important organs proves that it cannot long be otherwise. A portion of the lungs being solid, the respiration would, of course, become accelerated; hence the cause, in this instance, of the broken wind; while the liver, not being able to rid itself of the blood which it contained so readily as heretofore, congestion of the organ ensued, which, being permanent, produced softening and absorption of its parenchyma, and, in the end, hemorrhage amongst its loosened structures.

Hemorrhage of the liver, of a character resembling the present case, is, I believe, a matter of very rare occurrence: it happens oc-

casionally in association with rupture of the organ, of which records from time to time have been furnished to this Journal. The disease of the heart arose from a twofold source, physical and pathological, but more particularly from the latter. It will be borne in mind, that, in addition to the liver being diseased, the kidneys were also organically changed: both of these latter organs were softened, particularly the left one, which I have described as being in a "pulpy" state; a state which evidently resulted from the insidious progress of long existent disease.

Now, it must be evident that organs so all important to the economy of the organism as the kidneys and the liver are, could not long be diseased without giving rise to serious and important changes in this economy. The waste and poisonous matters which it is the principal duty of these organs to secrete and cast from the system would, in part, be retained; and it is to the constant retention of these matters that I principally attribute the diseased state of the valves and muscular substance of the heart. The hypertrophy of this organ would, without doubt, be caused, in some degree, by the extra amount of labour it would necessarily have to perform from the lungs having partially become solid; but the principal cause, after all, I strongly believe, would be the poisonous state of the circulating fluid. In like manner I would also, in part, explain the cause of the frequent attacks of megrims or vertigo; a similar cause to which, I suspect, may frequently exist, but which hitherto does not appear to have received sufficient attention.

Ere I conclude my remarks upon this head, I would allude to the difficulty of breathing which so suddenly manifested itself in this case; the principal cause of which I also believe arose from spasm of the glottis. I have now detailed three cases in which this affection was a prominent condition: the first the reader will find detailed in Case I, Contribution VI; while the particulars of the other two are furnished in the present Contribution.

Spasm of the glottis in the horse is an affection which has either never been observed, or, if observed, not regarded as worthy of notice; for certain it is that no allusion is made to it by any veterinary writer with whom I am familiar; and yet the importance of clearly recognizing it, especially to the young practitioner, is a matter which no one, I apprehend, will dispute. The affection in question bears a close resemblance in many respects to others, but more especially is it liable to be mistaken for those induced by choking, or by the accidental admission of fluids into the trachea: the symptoms in all have a resemblance in many respects; yet, by a careful attention to one or two particulars, the observer will be enabled to recognize the one from the other.

In choking, the difficulty of breathing at the commencement is

seldom so urgent as in spasm of the glottis, and the animal always makes violent attempts to vomit or eject the offending substance. In spasm of the glottis this symptom is always absent, unless the two should be associated; conditions which might possibly exist in one case, but which I am not aware of having hitherto observed*. In choking, frothy mucus and saliva is always thrown in large quantities from the mouth of the animal. In spasm of the glottis this state is sometimes absent: it was absent in Case II of the present Contribution, but present in Case III, and also in Case I of Contribution VI. On the other hand, where fluids have gained admission into the trachea, the true cause will generally be discovered by inquiring of the parties owning the animal as to whether a drench has been given, and if the beast coughed at the time of giving it or not; but, should any difficulty occur in this respect (and it does occasionally occur with grooms and carters), we must then have recourse to the physical state of the patient to solve the difficulty.

In cases where fluids have gained admission into the trachea, a loud râle is present in the tube, and also throughout the chest or the whole of the bronchial tubes, and, I may add, of almost similar intensity; while in spasm of the glottis the râle is loud and sharp sounding in the region of the larynx, which sound will be found to diminish in intensity the further the ear is removed along the course of the tube towards its inferior extremity; while in the bronchial tubes, and throughout the lungs, the sound differs but little, if any, from the normal state. Finally, spasm of the glottis is manifested as an effect of pre-existent disease, either of a local or general character, or both, but generally from disease; and, where inquiry establishes the fact of such pre-existent disease, it will go so far in deciding the real nature of the case.

Case IV is interesting in a general point of view; and it is remarkable that the substances liberated from the ruptured stomach should not, by their contiguity with the peritoneum, have excited an intense inflammation within the membrane, or the snbstances themselves have not been more diffused throughout the abdominal cavity. The symptoms, as a whole, were peculiar: the leaning of the body against the wall, and of the head upon the edge of the manger; the look of anxiety and of deep suffering exhibited by the countenance; the crouching position, and the wandering round and round the box; are all symptoms remarkably characteristic of some fatal lesion internally. Such cases, of course, are beyond all human assistance; nevertheless, they present questions of great interest to the veterinary pathologist.

* I have never seen any violent cases of choking: what I have witnessed have been principally of a mild nature.

TYPHUS FEVER—INFLUENZA—CATARRH—SORE THROAT.

By E. N. Gabriel, *M.R.C.S. and V.S., London.*

How or in what manner, or from what cause, this disease has acquired the dangerous character which has for some time past been attributed to it, I am altogether at a loss to account. So far from participating in this feeling—in apprehension of its danger, in fear of its result, in dread of taking charge of it—I know of no set of cases with which I should so much like to be inundated as this—none of which I should pronounce a more decided diagnosis—none in which I should be so little apprehensive of any bad effect being left by its *debris*. Influenza, as far as I can understand it, is to the adult animal what strangles is to the colt,—a kindly effort of nature to relieve the constitution of some impurities noxious to it; and as strangles may, and does occasionally, prove fatal to the one, so influenza may kill the other: but of this I am perfectly satisfied, that, with common care and attention, the rate of mortality in the latter will, in no given number of cases, exceed that of the former. It will, therefore, be perceived that I view the derangement of the system recognized as influenza scarcely as a disease, but as an effort of Nature to cleanse and renovate the constitution. I have never seen a case in which the condition of the animal did not improve after the attack, even where it was good before; and in numerous cases I have known animals that had been unthrifty for years put on first-rate condition after it, and retain this for years. How, then, has the note of alarm, so often lately hinted at in The Veterinarian, been excited? I am totally at a loss to answer the question. Let us see if the symptoms developed in the average number of cases will account for it.

A horse is found in the morning standing dull in his stall—his head, perhaps, resting on or drooping under the manger—the eye is dull—the coat rather staring—he has not cleared his rack and manger during the night. An observant groom will possibly perceive that he has not been lying down, and he does not care to move in his stall. The medical attendant on examination finds, in addition to this, the pulse more or less quickened; but, certainly, neither increased in strength or tone, neither hard nor jerking: the slightest pressure to the upper part of the throat induces, not a cough, but an effort, and a most unwilling one, to do so, the act itself causing too much pain for the animal to give way to it: the bowels are costive, the alvine excretions being small, nobby, and occasionally

covered with a slimy secretion—the conjunctival membrane may be slightly deepened in colour—the legs of unequal warmth—and the skin dry and arid. And the breathing;—why now and then it is slightly hurried, but not generally; and, when it is, its character is such that causes no apprehension as to the vital organs being implicated: in twenty-four or thirty-six hours a discharge, probably, from one or both nostrils, and, if so, so much the better. What causes of alarm have we here? Ay, but these are favourable cases, certainly; and this is the feeling I am writing with, namely, that the vast majority are favourable cases. But we shall meet with some worse; and in these we find the respiration more hurried, the pulse considerably quickened, weak, fluttering—deglutition nearly or altogether impeded—the throat considerably swollen, and all the secretions deranged. Or we may find it taking another form, the cellular tissue being the seat of its development: then the head is swollen—the nostrils and lips quite puffy—the eyelids nearly closed—the legs œdematosed, swollen, tender, pitting however freely on pressure, and the animal scarcely able to move in his box, or see his way round it. Besides all this, we may have the lungs implicated, the spine affected, the bowels giving way, diarrhœa, or dysentery. Surely we have enough now to alarm us. True; and still I once more repeat that influenza, properly treated, is not more fatal than strangles.

"Properly treated;" and this leads to the great diagnostic symptom indicated by the first title of this paper. This is an attack not of synocha or acute fever, requiring extensive depletions and active treatment, but of typhus or putrid-tending fever, the symptom requiring mild treatment, and the patient to be carried carefully and steadily through it. It is an inflammation not of a serous membrane, speedily fatal in its results, if not cut short by energetic treatment; but an inflammation of a mucous membrane in which any treatment that lessens the powers of the constitution interferes with and prevents Nature from having recourse to her own remedy,—namely, an increased secretion from the surface affected. A pure case of influenza never requires the use of the lancet;—have recourse to it, and you convert a case of simple typhus at once into typhus gravior: its treatment should be as mild and simple as the disease itself. A mild laxative, scarcely in any case exceeding two drachms of aloes—a combination of diuretic and tonic medicines—a counter-irritant to the throat, repeated daily, in preference to one active application—a cool box—moist food, but not antiphlogistic, will cure, with very little trouble but great credit to the judicious practitioner, forty-nine out of every fifty cases of influenza that he may have the good fortune to have placed under his care, with the satisfaction that his patients will be

in better health, better condition, and better spirits, after the attack than they were before he took charge of them. But, perhaps, you would wish to have the detail of this treatment.

Here it is:—At once give a mild laxative, combined with a tonic, say two drachms of aloes with two-thirds of a tonic ball: be careful not to exceed this dose, though it may happen rarely you may have to repeat it; for the bowels are very susceptible, the mucous membrane lining them being, as well as that lining the air passages, unusually susceptible. Let the throat be well rubbed with a mild infusion of cantharides till the animal shakes his head at you, to say he has had enough; order chilled water—mashes, with equal parts of oats and bran—green-meat if it is procurable—and a very small quantity of hay. Should there be a discharge from the nostrils, have the head steamed three times a-day over a pail half filled with hay and hot water, turning the former frequently; a cool box, and warm clothing, as a matter of course; the object being to lessen the determination of blood to the lung, and direct it to the skin. Repeat the embrocation to the throat every morning until a thick scurf has been thrown out; and give, morning and evening, what I call a mixed ball, that is, half a tonic and half a diuretic, combined. The tonic should consist of equal parts of ginger, aniseed, and bark, mixed with treacle, and this, beat up with equal quantity of the usual diuretic mass, gives an almost certain, and therefore invaluable, remedy for influenza. And you will find that, while you are thus administering a tonic and diuretic ball every twenty-four hours, the pulse is decreasing in number and improving in quality, the appetite increasing, and the skin and kidneys are pouring off with impunity the deleterious impurities of the system. You may have likewise to blister the throat, to stimulate the sides, to keep the skin warm with the hood and bandages; but if more than this is required, a more severe disease than influenza has supervened. This may be now and then pneumonia; and now bear in mind the striking evidence afforded how far the treatment is to be regulated by the character of the disease. While you had influenza your patient would not bear bleeding; the loss of even a moderate quantity would retard, if not impede, the cure; debility would supervene, and death might follow. But if, at the end of the second or third day, pneumonia should supervene, you may take blood with as much impunity as if no previous disease had existed.

One word more. I have occasionally seen violent philippics against the giving medicine in the form of balls. I at once take up the gauntlet, and assert, that any one who orders a draught or drink when a ball can be administered is a —— practitioner, from whom I beg leave to differ; and this more particularly applies to the present disease. You have to place the animal's head in an

elevated and unnatural position—you have to retain it there, and by physical force, too often violently and injudiciously applied, for some minutes—you have to pour hornfull after hornfull of fluid down his unwilling throat, in spite of all the animal's exertions and struggles to prevent it, any ten drops of which passing into the windpipe may set up the most violent irritation; you are never certain of the quantity you administer; and when you have, as you suppose, administered your dose, you behold your patient disturbed, irritated, panting, often perspiring, and in great distress: all which might have been avoided by your having given a ball, which, when of the proper consistence, may, in any position, be introduced in one instant into the pharynx to pass down the œsophagus, almost without the animal having been aware that such has been effected. The certainty of giving the dose, the facility with which it is given, and the tranquillity of the animal during the process, are reasons for continuing the formula of the bolus, which I have yet to see superseded.

THE CONTAGIOUSNESS OF THE DISTEMPER OR INFLUENZA.

By U. U.

Sir,—As two opinions are held with regard to the above disease, (whether it is contagious or not), I send you the following experiments.

On the 28th of May, a gentleman brought two saddle horses from the North on his way for the Derby, and put up at Mr. ——— stables. The horses were at once put into the sick ward, for the disease had been raging here for some time; indeed, one horse was removed to make room for them, and his rug taken off and put on the gentleman's mare, and at night a sick horse was taken out of his box and the mare slept there: the next day they were off for the races. On the first of June the horses returned, and were put into the same stable again: they continued well up to about the 14th (or aid was not called in till about that time), though the mare shewed what was going on for some days before then. By the 21st both were very ill, and under one of the first men of the day: at this date (29th), there is a doubt if either will recover again.

Previous to the above case a horse was very ill in a loose box with the disease; bran mashes, hay, steeped corn, &c. were given to him, and after he had taken what he liked of it, the remainder

was given to horses that were well; but being well and in good health, they withstood the disease for some days, but in about seven days they all had it.

Again, a horse was taken ill, and was removed from his stall, and another put into it, and he was taken ill on the 2d day.

But in all the cases, those have proved the most troublesome where the veterinary surgeon was not called in at first, but delayed for some days, the party treating them himself.

Perhaps you will say, that nothing stated here proves that it is contagious. After seeing what I have of it, I am of opinion that it is, but its malignity depends on the state of health of the animal at the time.

I wish these few lines may bring some of your correspondents out on the subject.

Your's very truly.

To the Editor of "The Veterinarian."

*** We are not at all sure, in our own mind, that the disease is not contagious, although we confess we have not been in the habit of treating the subjects of it as though it were. The contagiousness of a disease is by no means in all cases so readily proveable as unprofessional persons might imagine. What say some of our professional friends on the subject?—Ed. Vet.

EXPANSION OF THE FOOT.

By Edw. Chaly, *V.S.*

Sir,—Before the discussion on the expansion of the foot quite closes, I should like to record my opinion on the subject. I am, and have been for a long time, satisfied there is no expansion of the crust dependent on the action of the animal: an opinion I made public some years ago in a debate on shoeing, at the Veterinary Medical Association*. My object in these few remarks is to support, and, as far as I can, strengthen the conclusions arrived at by Mr. Gloag in the experiments so ably conducted by him, by shewing that we can apply no force to the dead foot powerful enough, or make any observations on the live foot delicate enough, to demonstrate that elasticity, *sufficient* for the well-being of the animal, is produced by the expansion of the *lower* part of the crust or wall of the hoof.

I have made experiments both on the live and dead foot. They

* See Transactions for 1842-43, page 190.

were not so varied or numerous as those of Mr. Gloag's, but proved equally conclusive as to the results. They forced a conviction on me, through long and close observation, that our very best and soundest hoofs were.those in which, from the quantity of horn, expansion seemed almost impossible. I commenced practice with no preconceived ideas likely to bias my opinion in any one direction; on the contrary, I had come from the College deeply impressed with, and entirely believing in, Mr. Coleman's views on the subject.

And here, Mr. Editor, I must differ with you, and some of your correspondents, when you say, speaking of this subject, that in future "nothing is likely to pass current save the result of actual experiment*." On the contrary, there is no part of the animal economy in which experiments are more likely to prove fallacious than those made on the foot of the horse; owing to the different states or conditions of this organ in different animals, and in the same animal at different times; and we need no further proof of this than the difference of the conclusions arrived at by Messrs. Gloag and Reeve in their very able and ingenious experiments on the subject. If we possessed no more knowledge in physiology than can be *demonstrated*, very limited indeed would be our knowledge; and I think the functions of the foot a subject as likely to be illustrated by comparison and analogy as any other disputed point in physiology. When we reflect on the uniformity and simplicity displayed by Nature all through the creation; when we see how simple and few are the great outlines of animal life—that from man downwards, through all the vertebrata, the spine with its contained cord, and brain, constitute the basis of all nervous systems, as a heart is of all circulatory apparatus; that the organs of progression are formed with consummate skill on the same general plan; that the same kind of termination to the extremities is found in all species of the same genus; and that those in which concussion is provided against by expansion have a structure expressly contrived for the purpose, and so contrived as to explain at once its use; and when we consider the peculiar conformation of the hoof of the family *solipedes*, we can hardly conceive why they should prove an exception, or why, if it was necessary for them to expand, a structure so different from those animals in which expansion *does* occur, should have been contrived.

The family *solipedes*, of which the equine is the only genus, and of which the species are but six, present us with a form of termination of the extremity unlike any thing else in the animal king-

* Mr. C. has not quite caught our meaning here. We intended the words—"that nothing is likely to pass current, &c." to apply to any replies that might be made to the facts elicited by Messrs. Gloag and Reeve, which were not grounded, as they were, on actual experiment.—Ed. Vet.

dom; viz. its single toe covered with tough and solid horn; and when, as I remark above, we observe the uniformity of Nature, it will hardly be contended that a difference of structure is provided, or a variety of function contemplated among the few species of which this genus is composed. And has it ever been supposed the ass possessed the power of expanding his horny hoof? or that the zebra or quagga, as they scour over the arid and hard soil of Southern Africa, or the dzigguetai (the wild mule of the ancients) as he roams through the deserts of central Asia, does not find elasticity independent of expansion of the hoof? And, if we can conceive such of the ass, &c. why not of the horse, who in a state of nature much more resembles his congeners than after we have stabled him, and trained him, and I may say lamed him? When we begin to examine his feet with a view to a removal of his maladies; and find in man, and the domestic animals we are most familiar with, that concussion is provided against by expansion, we, overlooking the great difference in the conformation of his foot, infer that, by rendering it expansile, we remove the causes which have lamed and rendered useless our much-valued servant: with what success let the past history of veterinary science attest. These things considered, we may, I think, fairly conclude, that in the wild or natural state the foot does not expand. It may, perhaps, be urged, that to compare a horse or his feet in a state of Nature to the very artificial state in which we keep him, or to think to illustrate the subject by such comparison, is useless; but to this I reply, there are thousands of horses now at work in which the feet approach very closely the natural state, both in hardness and form. And this it is that renders the question of expansion of so much importance, since upon it depends the practice of the art of shoeing. If the hoof is the elastic, springy, and *expansile* organ it is generally represented to be, we ought to pare, rasp, and soften these hard and oblong feet, leaving only horn enough to protect the sensible parts below; but if, on the contrary, the hoof was never intended to expand, we ought to leave it as nearly as possible as we find it, nailing on it, as simply and elegantly as we can, a piece of iron merely to protect it from the excess of wear, which on our roads and pavements is considerably more than the growth. I abstain from entering into the more difficult part of the question, viz. how is elasticity produced if not through expansion, because I think we ought to adhere to, and dispose of the question of expansion on its own merits, first. For the same reason I make no further remarks on shoeing, nor attempt any explanation of those phenomena which are rather puzzling in practice if expansion be not admitted. There yet remains a vast deal to be said on the subject of horses' feet, and

how to shoe them. The "basis for the repose of the profession" has yet to be found; and I cannot but think that the discussion carried on in the pages of your Journal during the last twelve months is a step in the right direction to attain so desirable an end. The subject deserves all the consideration that can be bestowed on it; and, I hope, will not be allowed to drop until it has received its thorough solution, or until some approximation to unity of opinion among the profession be arrived at.

I am, Sir,
Your's, &c.

To the Editor of THE VETERINARIAN.

EPIDEMIOLOGICAL SOCIETY.

To the Editor of "The Veterinarian."

38, Berners Street, July 1850.

Dear Sir,—Below is a reprint of a letter from the *Lancet* of the 1st December. May I request your favourable consideration of the same; and have the pleasure of enrolling you amongst those who approve of the cause?

I have the honour to be, dear Sir,
Your's faithfully,
J. H. TUCKER,
Hon. Sec. pro tem.

Remarks on the proposed New Society for the Investigation of Cholera and other Epidemic Diseases.

To the Editor of "The Lancet."

Sir,—I BEG to acquaint you and your readers, that, in order to carry out the views of a correspondent in your Journal for Sept. 15th, 1849, p. 301, with respect to the formation of a new medical society, to take into consideration a systematic investigation of epidemic diseases, that a few medical men formed themselves into a committee, have occasionally held meetings on the subject, and, after due consideration, have come to the conclusion that such a society is greatly needed, nay, almost absolutely demanded.

Every one who has read the medical journals up to the present day, and noticed the difference of opinion that still exists as to the

nature and mode of treatment of cholera, must be convinced that some systematic plan must be adopted to ascertain what means have proved the most successful in its treatment, up to the present period.

It is considered that no existing medical body, medical society, or otherwise, can carry the objects of your correspondent fairly out; not from want of inclination, which has been shewn by the zeal displayed in the discussions on cholera, and by the exertions of the cholera committee of the College of Physicians, but for the want, it is presumed, of pecuniary power. The medical institutions and societies in this country are self-supporting; how, then, can it be expected by the public that medical men can "grapple with the whole," unaided by the public purse, or by Government?

There never has been a medical society in this country which has devoted itself solely to the investigation of epidemic diseases; had there been such an one before the late visitation, some more settled plan of treatment might long since have been resolved upon. Those who had never seen cholera before might have been spared much anxiety, as they would have been enabled to act on more fixed principles, and on recent and good authority: the public could not then have said that the profession "knew not what they were about."

Can it be said that the cholera has left us? Where is it now? Even when it is no longer heard of, may it not be lying in ambush, awaiting a fitting opportunity to attack us again?

After having lost so many thousands of our countrymen by the devastating foe, we must first learn with what weapons we have been beaten, before we can well prepare ourselves for another attack.

It is painful to have to confess, that up to this day we neither know the real cause, the means of prevention nor cure of this awful malady; but, it is hoped, by the combination of talent in all branches of the profession meeting together under one roof, formed into one body for one good, one national cause, that what is possible for man to effect shall not much longer "remain a mystery." Having accomplished as much as this (aided by other countries) can effect with respect to Asiatic cholera, we shall still have to combat with other enemies to the human race, which at this moment are thought but little of.—Scarlet fever, typhus fever, smallpox, measles, &c. are said to have slain 12,000 annually in London alone. These also are diseases which require further investigation and discussions on the various modes of treatment, so as to test which are the most effective.

It is thought that the formation and working of such a society would give the highest satisfaction to the public, who anxiously

look to the profession for knowledge in these matters and that it would ere long prove a better bond of union with the public and the medical profession than any society which has ever existed.

It is the intention of its proposers to advise that all grades of the profession throughout the land, who may contribute any information, practical or theoretical, shall be admitted members free of expense.

It is also contemplated to call upon the public to aid the profession in this *national* undertaking, by subscriptions and contributions; and that the public so acting shall choose from among themselves a treasurer, and part of the committee to watch the funds and their due appropriation.

Previous to a call upon the profession to assemble at a meeting to hear other views on the question, and before calling on the public, it is earnestly hoped that those gentlemen who have proved themselves so zealous at the medical societies and elsewhere, and anxious to investigate cholera, will consent to unite with the few who have commenced this work, that the cause may be strengthened and enlightened.

These views do not bind as to the ultimate organization of the society, which is, at present, only under consideration.

The committee have requested me to act as honorary secretary *pro tem.*, also as treasurer *pro tem.*, for preliminary expenses.

I trust, therefore, to be favoured with the opinions of the profession as to the merits of the proposed society, as also with the names of those gentlemen who may feel inclined to unite in the undertaking, to whom due notice shall be given of further operations.

I have the honour to be, Sir,
Your obedient servant,
J. H. TUCKER.

38, Berner's-street, Nov. 17, 1849.

HERNIA—CASTRATION—DEATH.

To the Editor of "The Veterinarian."

Old Malton, July 17th, 1850.

Sir,—BEING a constant reader of your valuable Periodical, I beg to forward you the following case for insertion. Also, I should feel obliged by your method of operating in similar cases, and whether it is not possible to distinguish between water in the scrotal bag and rupture.

I am, your's obediently,
A CASTRATOR.

The subject of the following case was a two-year-old colt, named "Negropont," promising well as a racer, which had been trained by Mr. T. Cunningham, of Highfield Norton, near New Malton; but in consequence of an enlargement in the scrotum, which materially impeded his progress when galloping, and detracted considerably from his value, he was taken out of training: the enlargement of late having gradually increased, it being, at the time of the operation, which took place on the 9th inst., about the size of a man's hat.

Mr. W. Maw, of Thornton, near Pickering, was called in to examine him, and was of opinion that the enlargement was the result of water in the scrotal bag, and proposed setoning, which was agreed upon. He was cast for the operation. When laid upon his back the enlargement gradually disappeared, and Mr. M. now took a different view of the case, and considered it to be hernia. And, although Mr. M. is not a member of your profession, I assure you he is thought generally very clever in our neighbourhood. Castration was now the only resource. After securing him, and having all in readiness, the operation commenced. After dividing the skin, &c. the puddings (intestines) made their appearance. The operator felt quite bewildered, and declared all surgical skill to be of no avail. The external wound was closed, after returning the puddings (bowels), and the animal suffered to get up. He was doomed to be shot. After a few ineffectual fires from the trainer, he was ultimately shot by a looker-on.

The above case being connected with my particular vocation, I have taken the liberty of sending it for your perusal and insertion. I should be happy to have your opinion and method of castrating, as I have had a few cases in year-old colts with rupture. I do not know whether rupture is applicable at all to these cases, for I think there are many colts foaled so; and this, in my opinion, was Negropont's case. In year-old colts I adopt stitching the membrane covering the testicle, allowing the ends of the sutures to hang down. I learnt from a very extensive cutter, who cuts numbers of horses (aged) with the clams, to leave on this membrane; and I think the operator ought to have secured this covering in the above case with the clams. But you, no doubt, will perfectly understand these sort of cases, therefore I will close my long epistle.

*** The above is an instance of sad mis-judgment and lack of caution all the way through. Nothing can more plainly evince the want of the veterinary "schoolmaster." If "Castrator" will consult the Editor's "*Hippopathology of the Horse*," vol. ii, p. 291, he will, under the heading "Operation for the Hernia of Castration," find the information he seeks.—Ed. Vet.

VETERINARY JURISPRUDENCE.

Sayer *v.* Clarke.

Fever in the Feet?

Mr. O'Malley, Mr. Evans, and Mr. Palmer, were counsel for the plaintiff; Mr. Prendergast and Mr. Couch appeared for the defendant.

Mr. Palmer opened the pleadings. The plaintiff was Mr. Daniel Sayer, and the defendant Mr. Robert Clarke; and the declaration stated that in the month of October, 1849, the plaintiff bought of the defendant a bay cob gelding at the price of £40—that the defendant warranted it to be sound—and that it was not sound as warranted, which was the issue the Jury had to try.

Mr. O'Malley stated the case. He said the plaintiff was Mr. Sayer, a veterinary surgeon at Norwich—a gentleman, he believed, of very high standing, and to whom the gentlemen of the county were very frequently in the habit of resorting when they wanted horses. He did not act as an agent upon such occasions, but when he heard that a person wanted a horse, and met with one that was likely to suit, he bought it, in the expectation that the party would take it. Should the individual, however, not become a customer, Mr. Sayer took upon himself the responsibility of the purchase, and sold the horse to some one else. About the 4th of October last year, Sir Eaton Travers, of Yarmouth, happened to be in want of a horse, and intimation was given to Mr. Sayer by Mr. Steward, brewer, of Norwich, that the defendant, Mr. Clarke, who was a farmer and brewer at Weybread, in the county of Suffolk, had a horse which was likely to suit Sir Eaton. Mr. Sayer accordingly went over to Weybread to view the horse. The learned counsel then proceeded to detail the circumstances of the case, which will be found in the subjoined evidence. The action was brought to recover the sum of £22, the sum to make up the difference for which the horse was sold after he had been returned as unsound.

Henry Pearse.—I occupy a farm at Pulham, in this county. I know Mr. Sayer, the plaintiff, who is a veterinary surgeon in Norwich. The defendant lives at Weybread. I went there to look at a horse with Mr. Sayer. Mr. Sayer told him what he wanted. He looked round the horse in the stable, and the defendant said it is perfectly sound; I will warrant it. The cob was then led out of the stable, and was run backward and forward. Mr. Sayer was about to look at him again, when the defendant said,

look at nothing, Mr. Sayer; he is sound. I got upon his back and thought he was "stale"—that is, had been worked. He was then put into the stable, and we went into the defendant's house. Mr. Sayer asked the price, and the defendant said £45. The price agreed upon was £40. Mr. Clarke said he should expect £2 more if the cob turned out well. It was arranged that the cob should be sent to Long Stratton to meet some person.

Cross-examined.—Mr. Sayer mounted the cob himself. He did not ride it two miles, nor a quarter of a mile. Mr. Sayer did not look at the horse's feet. I do not know whether he looked into its mouth. He walked round the horse. Mr. Sayer is my brother-in-law, and is a horse dealer; but he only looked round the horse. He tried its paces before he mounted him, by running it up a gravel.

Re-examined.—He did not take up the feet at all.

John Aldis.—I live in Norwich. I am a horse clipper during the season. I have been accustomed all my life to horses. On the 6th of October I was sent to Stratton for a horse. Mr. Clarke's servant gave the cob into my possession. I rode him from Stratton to Norwich. It came very feebly and fumbling on its feet. I rode it slowly, and was two hours and a quarter in coming. I observed it while standing in the stable afterwards. It was standing pointing with his toe. I should judge this was from pain. On arriving at Norwich I took the cob to Mr. Sayer's stable. A few minutes after Mr. Sayer requested me to take it to Mr. Steward's brewery; I did so, and left it. On the same day I met Mr. Clarke near the plaintiff's. He asked me if Mr. Sayer was at home. I did not say any thing to the defendant about the horse. The defendant said he wished to see Mr. Sayer at his quarters.

Cross-examined.—I saw Mr. Clarke as I came from Mr. Steward's brewery. I said nothing to either plaintiff or defendant about it.

John Withers.—I am servant to Sir Eaton Travers, and was so in October. I went to Mr. Steward's brewery for a cob, which I took to Yarmouth. As I rode on the way I found he was a tender-footed horse. He dropped once or twice. He dropped, being tender-footed and thin-soled, when he touched a stone with his foot. When I put him into the stable he pointed the toe, and I found he did this next morning. It was the same foot, but I cannot say which. I named this to Sir Eaton Travers, who sent the horse to a blacksmith's the same day. I merely tried the horse once or twice for exercise. He still went feelingly. After trying the horse for some time Sir Eaton Travers returned it. I brought it back to Norwich, and left it with Mr. Sayer.

Cross-examined.—The horse is not a very plain one, not quite so good a horse as it would become Sir Eaton Travers to ride. It

would do for a farmer. Sir Eaton Travers would not have minded the looks. He never said it was a bad-looking animal. He is not too handsome, not a handsome horse. He was returned after Sir Eaton had had him about a month.

The cheques, by which payment was made for the horse both to Mr. Clarke and Mr. Sayer, were put in.

John Gowing.—I am in the service of Mrs. Manning, of Yarmouth, who carries on the business of a blacksmith. I recollect Sir E. Travers sending a cob. I observed the foot. I told Sir Eaton that he would not be safe unless the foot was covered with leather. I pressed my finger against the diseased part, and the horse drew back its foot as if in pain.

Richard Carter.—I am a veterinary surgeon, at Dereham. I examined the horse on the 15th of December. I found the sole of the foot not only altogether flat, but bulging at points. I should say that the foot was altered in structure, from some inflammatory action. I mean that it was out of formation from inflammatory action. The disease is called "Laminitis," that is, inflammation of the laminæ. The effect was to cause a tenderness of the foot. It would be unsafe for any one to ride him on a rough road who valued his neck. The disease had been of six months' standing. I did not know that the disease would get worse with attention. It would require a leather shoe. This among persons of my profession is considered an unsoundness, and incapacitates a horse for performing its ordinary duty.

Cross-examined.—I do not think the horse would get better. If he was placed up to the fetlocks in water for some time, or in soft clay, he might get better so as to deceive the eye, but he would be as bad as before in a week. With the assistance of a leather shoe, he might be used. He would not, however, be any thing more than an unsound low-priced horse. The leather upon the foot would act as a protective agent.

William Smith.—I am a veterinary surgeon, at Norwich. I saw the bay cob in question about the 8th of December. I examined it. I had the shoes removed. The feet were not sound. The disease had, probably, been of some months' standing: I will not say how many—it is impossible for me to say how long, as there is in some feet a predisposition to the disease. I should say it had existed in this horse more than three months.

John F. Collins.—I am veterinary surgeon to the 16th Lancers. I examined the cob on the 10th December. I am of opinion the horse was unsound. I should say that the disease was from six to eight months' standing.

Cross-examined.—It is unlikely that the horse would have got better. No one who was unaccustomed to the disease would be

able to discover that he was lame. A groom would discover that the horse appeared lame, and so would any one accustomed to a horse.

Augustus Crooke.—I am a veterinary surgeon at Bungay. I examined the fore feet of the horse, and found one of them unsound. It is my opinion that the disease had existed a considerable time.

Cross-examined.—I have not seen a horse get better of the disease. I think that when a good and useful horse is taken in time, he might be passed off by a dealer to a tradesman or small salesman. I do not think this horse will ever be made sound; but by being taken great care of, he may be put into a cart and do a little work, or sometimes into a gig, though I should not like to drive him.

Mr. Spelman, jun. auctioneer, of Norwich.—I sold this horse on the 5th Jan. The animal fetched £18.

Was he sold well? If he was unsound, he was. I sold him to Mr. W. Butcher, of this city.

Mr. W. Butcher, jun. of Norwich.—I bought this horse. Mr. Tom Saul said it was a nice sort of horse, so I bought him. Saul rode him once, or his nephew. I then understood the horse did not go well—that he was unsound.

What did you do with him?—Sent him to Attleborough. I did not warrant the horse: I got rid of the animal at once.

The Judge.—What is Attleborough?

Witness.—A large Repository sale.

Cross-examined.—I know Sayers. He did not say the horse was good, but Mr. Clarke said he was a very good one, and I was not to be deceived by the cheapness of price. I found Mr. Clarke a fond deceiver, for I lost £5 by the horse.

Tom Saul.—I was present when the horse was bought. I rode him on the following Tuesday. He was unsound in both fore feet.

Cross-examined.—How do you know he was unsound? Why, any body not an idiot could see that.

A letter from the plaintiff to the defendant, dated the 1st of December, 1849, stating that the horse had been returned to him as unsound—that he had returned the purchase money to Sir E. Travers, to whom he had given the defendants' guarantee, and expressing a confident hope that the defendant would not allow him to be a loser; and another, from the defendant in reply, in which he stated that he should have no further correspondence about the horse, that he was sound when purchased by the plaintiff, and that if he was then unsound, it had been caused by the plaintiff or the persons who had had him, were then put in and read.

This was the case for the plaintiff.

Mr. Prendergast, for the defendant, contended that the horse was perfectly sound when sold by the defendant, and was so at that moment. The fact was evident, because Mr. Sayer was a veterinary surgeon, well skilled in horses, and in the habit of purchasing many, and it was very unlikely that he would allow an unsound animal to be palmed upon him. There could be no doubt that too high a price was given for the horse when £40 was paid. It was a hunting cob, and was not worth any thing of the kind; and having been returned by Sir E. Travers because it was not handsome enough for him, and the plaintiff finding that he had paid too much for him, sought to return him on the ground that he was unsound. It was true that he was a description of horse called "flat foot," but that did not constitute unsoundness. After commenting upon the evidence that had been given in support of the plaintiff's case, the following witnesses were called:—

John Spaull, groom of the defendant, Mr. Clarke, stated that his master had possession of the horse about a year before he sold him. He had frequently ridden the horse, which went well, and without stumbling. He had seen the horse in the possession of Mr. Howlett. Mr. Crabb, Mr. J. Wayman, and Mr. O. Wayman, saw the horse at Bungay, about a week since. He went to Culford from Weybread on the horse about Friday. The distance is thirty miles.

Cross examined by Mr. O'Malley.—The horse was taken to the blacksmith's to be shod. The second time I went with the horse to the blacksmith, but the blacksmith did not say the foot was unsound, nor did he say the horse was flat-footed. There was no suspicion the horse was wrong in the shoulder. The horse was put to work, and my master rode it himself a great deal. The horse never fell, nor was turned out to grass. The colt-breaker and my young master rode the horse. The horse was often ridden sixty miles in a day.

By Mr. Prendergast.—The horse was never made up or doctored.

David Smith, colt-breaker, at Weybread, deposed that the horse had been much ridden by him. The longest journey he took with the animal was to Euston Fox, twenty-seven miles. The next day his master coursed with the horse, and he (witness) rode the horse home.

Cross-examined by Mr. Evans.—Did you ever say this horse was a screw?—No. Did you ever assist in getting rid of a screw? —That is my business.

James Barber, blacksmith, of Weybread.—Had shod the horse for twelve months, and saw nothing unsound about his foot. The foot was flat, and the sole thin.

Horace Howlett, dealer, and horse dealer, bought the horse at Attleborough, and still possesses it. The animal I think, is sound. I have ridden and driven the horse. It is not a horse of high action, but it is a good one. I have tried him hard. I have ridden him seventeen miles to hounds, hunted him, and ridden him back the same day.

Cross-examined.—I deal in horses sometimes. I have kept the horse myself so long, because he was a good hunter. The horse is not a high stepper, which is better for a riding horse. This horse goes "fleet." I have let the horse out several times. The horse is in Norwich. I rode the horse to meet Mr. Glasspole's hounds, at Kirby Cane.

Thomas Neeve, innkeeper, and farrier, at Halesworth, rode the horse as a hunter at two runs. His son also rode the horse. It was perfectly sound.

Cross-examined.—Mr. Howlett told me he had bought a horse that was disputed in character, and Mr. Howlett wished me to ride him, and give him my opinion. I saw the horse had a flat foot, but he was not tender on the road.

Mr. Horace Durrant, farmer, at Wisset, knew the horse, and had rode it at a hunt. He believed it to be sound, nor was it tender footed.

Mr. Crabb, veterinary surgeon, of Bungay, examined the feet of the horse. The horse was flat-footed, perhaps thin soled, but not unsound. The horse did not go lame. He had ridden him on the road, stones, and turf.

Mr. Owen Wayman, of Stowmarket, deposed to the same effect. He took a regular examination of the foot on Saturday week, and never saw a sounder horse. The horse is flat-footed, but has plenty of sole.

Isaac Wightman, veterinary surgeon, at Eye, saw the cob the same time. It was examined by Mr. Henderson on Wednesday morning. Decidedly it was not unsound. Looked at its feet, they were not diseased.

Nelson Bedingfield, livery stable keeper, Norwich, knew the bay cob, which was now at his stables. Saw it on Wednesday morning, and observed not the slightest appearance of unsoundness or lameness.

Alexander Henderson, veterinary surgeon, Park-lane, London. I was veterinary surgeon to the late Queen Dowager, and have been in practice many years. I have seen the bay cob in question. It was walked, trotted, and galloped. It did not stumble in the slightest. I examined its feet. They are perfectly sound. It has what is called a flat foot, but is nowise unsound. I am of opinion it could not have been affected with *laminitis.* The sole would have descended by this time if allowed to go on, and then

I do not think it would have been possible, permanently, to remove the disease. I observed no traces of any such disease, and from my experience I do not believe that it ever existed.

Cross-examined.—There was no appearance of disease in the foot having ever existed. There were no appearances to induce me to believe that the foot had ever been diseased.

Mr. O'Malley having replied,

His Lordship summed up. He referred to the letter that had been written by the plaintiff to the defendant after the horse had been returned by Sir E. Travers, and put it to the Jury, whether it would not have been a more sensible course if the parties had said to each other "Do not let us be spending money in bringing persons from Eye, and from London, which will amount to more than half a dozen cobs are worth; but let us call in three persons to examine the horse, and see whether it is sound or not." The plaintiff had made an application which might have ended in some such arrangement being come to; but the defendant had at once assumed a hostile tone, and said—"It is of no use writing to me about the horse, I can have no further correspondence upon the subject. I have sold the horse to you; and, if he is unsound, he has become so in your hands." The defendant had thus precluded any such arrangement being come to. The Jury had heard the evidence, which certainly was of that *contradictory character usual to cases of the kind.* But it was his duty, as Judge, to put it to the Jury, whether, when a respectable man was called in and asked to give his opinion as to the soundness or unsoundness of a horse, he was not entitled to more credit than a person who was asked to give his opinion, upon the express understanding that he was to be a witness in the case. Mr. Henderson, a respectable practitioner in London, had been brought upwards of 100 miles to give an opinion with respect to a horse that was not worth more than £20—little more, in fact, than the amount of his expenses. He was brought not only to give an opinion as to the soundness of the horse, but also to give evidence in the case. No doubt that if, in the exercise of his judgment, he considered the horse unsound, he would have said so; but when the Jury found respectable practitioners on the other side, who said the horse was unsound at the time, then they could only decide between the conflicting statements by taking into consideration those minute circumstances which arose in the case, and which tended to turn the scale one way or another. His Lordship then briefly recapitulated the facts of the case.

The Jury, after a few minutes' consideration, returned a verdict for the plaintiff, damages £22, the full amount claimed.

The Court was much crowded during the trial of this case, which concluded the civil business of the Assizes.

Home Extracts.

Royal Agricultural Society of England.

The following account of the origin of the Society, from the *Norfolk News* of last year, compiled by Cuthbert W. Johnson, Esq., will be interesting to the agriculturists of the districts in which the meeting of the Society has just been held.

For many years after the dissolution of the Board of Agriculture, there was not to be found in this country any national society which, in its objects and power, could be compared to the great and successful Highland Society of Scotland. The first person who steadily and successfully exerted himself to form such a society, was Mr. William Shaw, of London—a gentleman to whom, in this as in many other great efforts, agriculture is deeply indebted. On many occasions, during 1834 and the succeeding years, in more than one agricultural periodical, he suggested and advocated the establishment of a national institution for the advancement of practical agriculture, and of practical agriculture only. He had also, to accomplish this object, several personal communications with the late Lord Spencer, the Duke of Richmond, Mr. Handley, and other great leading agriculturists; and, in consequence of these efforts, at the dinner of the Smithfield Club, on the 11th of December, 1837, Lord Spencer, in his address to the members of the Club, suggested the establishment of such a society—a suggestion which was warmly received by the meeting, and was immediately responded to by the Duke of Richmond, Mr. Handley, Mr. E. W. Wilmot, and, in fact, by the whole party.

Lord Spencer remarked (alluding to the Smithfield Club), "Our society in the metropolis is totally useless for the promotion of the general purposes of agriculture; but if a society were established for agricultural purposes exclusively, I hesitate not to say that it would be productive of the most essential benefits to the English farmer. There is one point, however, which I must impress upon you, in reference to the formation of a society such as I have mentioned, namely, that there can be no prospect of our obtaining any useful results, unless politics, and the discussion of all matters which might become subjects of legislative enactment, are scrupulously avoided at its meetings." The Duke of Richmond, at the same meeting, expressed as his opinion that "such an institution would promote agriculture, and confer great and inestimable advantages

on every class of the community." Mr. Handley, when observing that he had long contemplated the formation of such a society, very truly remarked, that "there is not a single department of farming but what is capable of vast improvement." (*Farmer's Magazine*, vol. viii, p. 48.)

A short time after this discussion, there appeared a very excellent pamphlet from the late Mr. Handley, dated from Culverthorpe, in January, 1838, entitled "A Letter to Earl Spencer (President of the Smithfield Club) on the formation of a National Agricultural Institution." In the course of this, he very justly observed (and the answer to his concluding question can only be made in one way) "great attention and expense, spirited emulation, and well-directed experiments, grounded upon scientific principles, have succeeded in producing that near approach to perfection in breeding and feeding cattle, which was so remarkable at the late Christmas show. Why, then, should not the same combined efforts be united in the application of *science* to the sister art, agriculture, which your lordship has justly pronounced to be still in its infancy?"

The public impression of the value of such a society to the advancement of agriculture now became too general to fail of producing the expected results, and in the early part of the following month of March an advertisement appeared in the public papers, to the effect that several noblemen and gentlemen "having observed the great advantages which the cultivation of the soil in Scotland has derived from the establishment and exertion of the Highland Society, and thinking that the management of land in England and Wales, both in the cultivation of the soil and in the care of woods and plantations, is capable of great improvement by the exertions of a similar Society, request that those who are inclined to concur with them in this opinion will meet them on Wednesday, the 9th of May, 1838, at the Freemason's Tavern." To this was attached the signatures of the Dukes of Richmond and Wellington, the Earls Fitzwilliam, Spencer, Chichester, Ripon, and Stradbroke, Lord Portman, R. Clive, B. Portman, B. Baring, Sir James Graham, Sir F. Lawley, J. Bowes, E. Buller, R. A. Christopher, H. Blanchard, W. T. Copeland, J. W. Childers, R. Etwall, H. Handley, C. S. Lefevre, W. Long, W. Miles, J. Neeld, E. W. W. Pendarves, P. Pusey, E. A. Sandford, R. A. Slaney, J. A. Smith, R. G. Townley, W. Whitbread, and Henry Wilson.

In consequence of this address, on the 9th of May a very numerous and influential meeting was held, at which Earl Spencer presided, and at which, after some attempted interruption by one

or two persons who did not exactly comprehend the objects of the proposed Society, it was resolved, on the motion of the Duke of Richmond, seconded by Mr. Handley:—1. "That a society be established for the improvement of agriculture in England and Wales, and that it be called the 'English Agricultural Society.'" 2. On the motion of Sir Robert Peel, seconded by Mr. C. Shaw Lefevre, "That no question be discussed at its meetings of a political tendency." 3. On the motion of Sir James Graham, seconded by Mr. W. T. Copeland, "That the Society should consist of two classes, Governors and Members." 4. On the motion of Earl Fitzwilliam, seconded by Mr. P. Pusey, "That annual meetings be held successively in different parts of England and Wales." 5. On the motion of the Earl of Chichester, seconded by Mr. E. S. Cayley, "That a Committee be appointed to frame Rules and Regulations, and to report to a general meeting on the 27th of June." And it was finally agreed that all those who joined the Society before that day might become members of the Society; but that subsequently to that period, they should be elected by the Committee.

The list of those who by the 12th of May, or within three days of the Society's formation, were its members, is worthy of being preserved: it is a list which we have little doubt will long be a source of interest to the English farmer, for it contains the names of almost all those who, with Mr. Shaw, may be regarded as the founders of the Society.

Thus commenced the Royal Agricultural Society of Englnnd—an association which, in ten years only from its formation, has outstripped, both in power and in usefulness, not only the Highland Society of Scotland, and every other agricultural association in the United Kingdom, but bids fair to achieve still greater things hereafter for the husbandry of Great Britain.

MEETING AT EXETER.

The twelfth Annual Meeting of the Royal Agricultural Society of England came off last week in the ancient city of Exeter, and in no other place has the Society received so warm and flattering a reception.

Though the proceedings of the show did not commence formally until Wednesday, the note of public rejoicing had already been sounded; flags of all nations, parties and colours, were hung out from the windows, triumphal arches spanned the principal streets, mottoes of a patriotic and agricultural character appeared on every side, with a due proportion of evergreens around them to set them off, and make them have a refreshing effect. In most of the shop

windows, tickets announced that comfortable accommodation might be had within by strangers. The hotels were all prepared to be besieged by an overpowering force of visitors, and no garrison threatened by a strict blockade ever laid in provisions of all kinds with greater care. At the railway terminus immense quantities of stock arrived by every train, and these, as they passed along the road to the show-yard, became objects of great attention. The larger animals made out the distance on foot, while the pigs and sheep were conveyed comfortably in vans, the exertion of a mile's walk being quite out of the question with them. In the selection of the spot where their exhibition took place the Society have this year been less guided by an eye to the picturesque than to the convenient; and the preference they have thus shewn is, no doubt, a wise one, though the general public might wish, while gratifying their curiosity in matters agricultural, to have it combined in some degree with scenic effect, as has generally been the case at previous meetings. The show-yard lay south east from the city about a mile, in a field belonging to Mr. Turner, of Barton, and enclosed on nearly every side by hedge-row elms, the ornament of Devonshire landscapes, although an obstacle to its agriculture.

The meeting of the Royal Agricultural Society at Exeter, as a whole, may well be regarded as the most satisfactory of any hitherto recorded in the annals of the Society. The cordial and enthusiastic reception given to the members and visitors by the inhabitants of this ancient city, and the Devonians generally, is such as cannot fail to make a lasting impression on all who were so fortunate as to experience it. Having attended every country meeting since the establishment of the society, we can state with confidence that the Exeter meeting is without a parallel. Triumphal arches, constructed with laurel and oak branches, surmounted with crowns and transparencies—the latter containing inscriptions expressive of loyalty to the Sovereign, welcome to the society, and hearty aspirations for the prosperity of agriculture, met the eye in every direction; while union-jacks, and innumerable flags and banners with appropriate devices, were suspended across the streets, or projected from the windows in such numbers as to hide the greater part of the houses from view. The appearance of the whole carried the mind back to those periods in ancient history when the people of Greece or Rome honoured with a triumphal entry into the metropolis some citizen who, by noble deeds of arms, had successfully vindicated the honour of his country, or rescued her from some foreign aggressor. How much more gratifying to witness such a demonstration of feeling at the advent of a society, the object of which is to promote that peaceful art so essential to man's existence, and which, from its very nature, is

more calculated to imbue the mind with admiration and reverence for the wonderful works of the Creator! At this particular juncture, too, when circumstances exist, not only calculated to damp the ardour of the agriculturists, but to cause dissension amongst them, it is doubly gratifying to see such a spirit evinced in aid of the cause of agricultural improvement, and such a determination manifested not to permit any speculative difference of opinion to impede the promotion of the great objects of the society. Although not yet arrived at perfection, a very great improvement has taken place in the management of the country meetings, and especially in the department which embraces the trial of implements. The noble President, the Marquis of Downshire, well merited the encomiums passed upon him by the Earl of Yarborough, for the manner in which he conducted the business of the chair at the Pavilion dinner. We cannot omit notice of the activity and energy displayed by Mr. Brandreth Gibbs, the Honorary Secretary, and the steady, business-like, and affable manner in which the Secretary, Mr. Hudson, went through the onerous duties which annually devolve upon him on these occasions.

Mark Lane Express, July 22.

THE REMOUNTING OF CAVALRY.

By Lieutenant HELY, *late Riding-master 7th Hussars, Paymaster 11th Hussars.*

THE demand at present made on the public for remounting our cavalry is greater than can be warranted by the reason upon which it purports to rest, viz., efficiency, because *in*-efficiency prevails. And yet the system of buying is carried on as if there was no doubt at all about it, though every one who understands it has, in his own mind, a conviction on the subject utterly exclusive of doubt—*that it works badly.* I will now advert to what I consider the defects of this system.

The first point deserving attention in the exposition is the employment of horse-dealers; which brings me to the consideration of whether the dealer should be allowed to realise an exorbitant profit, or whether all the Government contemplates is, to reimburse him for his trouble and reasonable charges.

The functions of the dealer are, to produce horses for approval (receiving on such approval the sum of 26*l.* 5*s.*), so that it may be supposed that a reciprocal interest exists between him and the re-

giment, inasmuch, that if his credit abandons him in the transaction, his prosperity will also abandon him. It is not so. Let us see how he may conduct himself in it.

Every one knows how readily the estimate which a horse-dealer forms on the question of right and wrong accommodates itself to his own interest in his dealings with a regiment: there may be any relaxation of principle so long as he satisfies the officer appointed to pass, and thus not render back to the Government such a return as may be equivalent for the sum he received.

Now, the officer may have reached the maturity of an established reputation for knowledge of horses in the regiment, let him be either a commanding officer or a subordinate, as far as the animal goes for his own use; that is, he may be a judge of an eighty pound horse, but rarely knows any thing of a horse at the price given for a re-mount (bought under the hurry and excitement of a fair), and the nakedness of his knowledge awakens him out of the delusion of his competency to judge, when he is called upon to pronounce upon the fitness of a *three*-year-old, the acceptance of which is pressed upon him by the dealer, who knows well that it must become a question of time, and that *that* time, come what will, will relieve them *both* from responsibility, provided the animal be *then* passed. How wide, therefore, is the operation of selfishness on the part of the dealer, and how limited that of control on the part of the passing officer will appear.

If it is asserted that the Government cannot enter upon the purchase of troop horses by a more prudent and economical system, it should be shewn that advantage is derived from it; but it will be difficult to collect from inquiries that any, the least, do so result. A catalogue of miscarriages, displayed by their want of judgment, is to be found in every barrack-yard, and it would be easy in every one of these cases to trace the cause of failure. At inspections for casting, horses are shewn that never should have been bought, some with *one* year's service, never having done one day's work, some with two, three, and four; in fact, four is an average not infrequent to be found out of a large casting of between twenty and thirty—and this, after all, is the best way of arriving practically at the solution of the question of the dealer's use. It is my conviction, that in many regiments such cases will be found, and I speak positively as to some; there is, then, no question of the fact of a very extended abuse of the system, and the reason is, the parties do not acquit themselves well of their trust.

It is now my purpose, having investigated the utility of the dealer, to proceed to offer my ideas of improving the system.

By the present system, *bad* as well as *good* horses derive the

same price without any restriction; for instance, the same sum is paid to the dealer for a bad *three* as a good *four* years old, than which nothing can be more absurd; for the supposition that a *three* is as valuable as a four-years old, all things being equal, is opposed to the spirit of commerce in horse-flesh, and certainly not respected in England. Perhaps expediency has a good deal to do with this. Regiments requiring twenty or thirty horses will often take half the number of an inferior description, in order to complete, should horses be scarce; because it is deemed essential to the *apparent* efficiency of the corps that it be complete, having their remedy to cast those which fail without reference to the service of the animal, so that you *may* have the value in *one*, but impoverished by *many*, when the *whole* ought to be good. I think, therefore, as the evils arise from bad buying, either on the part of the dealer or the passing officer—whose peculiar fitness for the functions of passing not always being proved by experience, and which empowers them to entail on the service the expense of animals so frequently useless —that the most effectual remedy will be to pluck up the evil by the root, do away with dealers altogether, and vest their functions in other hands, where real benefits may result.

To replace the commanding officer and dealer, I naturally look to the profession of a cavalry officer of some description for election; and, I think, it may fairly be pronounced beforehand, that a Board of Officers composed of a major or captain, a veterinary-surgeon and paymaster, provided they be well selected (all private and unworthy purposes being suppressed by restrictions), will answer the purpose. I do not think that many commanding officers would express discontent if they were relieved from purchasing: it is said, however, that an *esprit de corps* exists which produces great competition to mount their regiments well. It is quite true that commanding officers exclusively charged with the fitness of their horses may be animated by a sense of the importance with which they are invested; and if they *would* exert the means which are bestowed upon them, and that *knowledge* of the young re-mount necessarily co-existed with their rank of commanding officer, we should not now be asking how it is that some regiments are so much worse mounted than others, which is at once a commentary on their fitness. Again, their tenure of office is uncertain—frequently brief; and let not the fact be overlooked, that very few of them think alike about the animal. Many of them will transact every thing in their own persons—others prefer employing what they consider efficacious means, and trust entirely to a dealer—others, again, rely on their veterinary-surgeons, and occasionally we find these gentlemen have done credit to themselves by the active part they have taken. Mr. Wilkinson, late of the 17th, Mr.

Hallen, of the 6th Dragoons, and the late Mr. Heyward, of the Carabineers, have certainly distinguished themselves.

I propose that re-mount horses be bought by this Board for all regiments in England, a similar one being nominated in Ireland. York barracks, generally holding a troop or squadron, can accommodate this depôt without inconvenience, and, being central for the counties where troop-horses are bred, is an additional advantage. For Ireland, Newbridge would be found all-sufficient.

That advertisements should be issued one month previously to casting horses by regiments in all the counties where horses are bred for troopers; to the effect that on a certain day, at a certain place, this Board will attend to buy troopers (with the conditions), nothing under four and over five will be taken. This to be done in the beginning of spring and autumn.

To provide for the care of these re-mounts, I propose that men who may have served twenty years be detached from their regiments to this depôt, to the number of about ten per regiment, and *there* complete their service of twenty-four years: thus these re-mounts will, in the course of three months, have gone through the process of stabling, with a fair proportion of training, such as singeing, bucking, and snaffling, to fit them for their respective regiments, where they will be found sufficiently advanced for immediate work, with all the tendency to completion. Here I will remark, that as many regiments can scarcely be considered more than mere nurseries for recruits and re-mount horses, the expenditure for conducting the nurseries for young horses can be diminished a few hundreds by concentrating them in this depôt, the current expenses of which will be covered by the saving of forage, &c., which will take place between the selling of cast horses and the purchasing of re-mounts to replace them. Again, when we consider that the operation of the present system is occasionally this enormous number of young horses, and perhaps recruits, it is impossible but that many regiments must have long intervals of inefficiency.

Who has not seen strings of young horses led by dragoons on foot through the country on a long march? Who does not know how prejudicial to young horses are such marches, producing the evil of retarding them perhaps for months? and who of the initiated could not extend the number of these evils, were it needful?

I come now to another important proposed alteration from the present, in the price to be given for four years old. At present, £26..5*s.* is the fixed sum: if this sum was given in full, and the judgment of the buyer was good, we should *now* have a ten pound better animal; but the exorbitant profit of the dealer leaves us as we are.

I know full well all the remarks which will be evoked by what

I am about to propose; but my experience and investigations, nevertheless, induce me to declare, that it will, in every way, be better to buy at four years old than three, claiming for the four, what I think I may be justified in, viz., the character of being six months nearer his work than the *three*, so that he will take just half the expense of keep that the *three* will to place him on an equality for use. I therefore propose that £35 (thirty-five) be the price, including all expenses, such as delivery at the depôt, and travelling expenses for the Board.

I have furnished at the end an elaborate analysis*, shewing the first cost to the public of a troop horse purchased, according to the present system, at *three* years old, up to the period he becomes effective; also the cost to the public of the effective services of the said horse per annum through the different stages of his service, taking the average at seven years (which is the average for the last year's expenditure), accompanied by a like statement of a horse purchased at four years old, taking the average service at ten years, which, if well bought at £35, I think probable, and probability is generally received as a guide.

It will appear by these two statements that the four-years-old has the advantage throughout, taking him at six months' keep and the *three* at twelve months. The four years starts £9..14*s*..7*d*. at less cost, and continues year by year less expense for effectiveness. I have likewise prepared a comparative view of the first cost and expense of re-mounting the cavalry with *three* years old, and the estimated expense of re-mounts purchased at four years old at £35, up to the period of their becoming effective troopers respectively. Again; placing the *three* years old at twelve months and the four at six, previously to their becoming serviceable; which shews an annual saving to the public in favour of the four years old, as compared with the threes, of £2646, and a saving in efficiency of £18,003 per annum.

Again; I have shewn that by the saving of forage for six weeks, which is about the time the Board would require to purchase the re-mounts (three weeks in spring and three weeks in autumn), the total expenses of the Board and depôt would be covered; as by the Circular Memorandum, dated Horse Guards, November 12, 1847, "Commanding Officers are instructed to proceed in the purchase of a number of horses equal to that of the cast, although the cast may not have been sold."

Finally, without denying that defects and abuses are inseparable from every system, let us look how this may be expected to work.

First.—The objectionable and middle-class men (dealers) will be done away with.

* The insertion of which, on account of its length, we regret our space forbids.

Secondly.—Horses will be bought at an age when judgment can better decide their fitness, their external conformation more developed, their internal structure and soundness, together with action, more leisurely considered; thus escaping a transitory examination, so productive of ulterior failures, such as result from the hurry and disturbance of a fair.

Thirdly.—Regimental nurseries for horses will be broken up, and *one* will supply the whole.

Fourthly.—A saving to the public in the purchase of £2646 per annum.

Fifthly.—Efficiency will be augmented equal to £18,003 per annum.

Sixthly.—A depôt covering its own expenses.

Seventhly.—A class of men of doubtful efficiency will become most useful at this depôt.

Eighthly.—*That* superiority which once belonged to the British cavalry, and is fast impairing, will again be maintained; as scarcely a doubt can arise that both the Government and breeders will be stimulated to some measures advantageous to both: the former, perhaps, by supplying stallions to serve the mares of the latter, having a preference of the produce; and the latter, with this provision, meeting the wants of cavalry at remunerative prices.

British Army Despatch, 17th May, 1850.

Foreign Extracts.

The Influence of the Cutaneous Secretions on the Integrity of the General Functions of the Organism.

By M. H. Bouley,

Professor of Clinique at the Veterinary College, Alfort.

[Continued from page 356.]

We had proof in a former article of the rapid and energetic influence of plasters accurately applied to the entire surface of the skin trimmed of its pilous clothing. A few hours after the stopping up of its pores by layers of impermeable matter, signs of evident disorder, though at first ill characterized, presented themselves in the organic functions. First, the animal grew dull, depressed, listless to things in general passing around him, which at another time excited him; impressible only by agents coming in immediate contact with the skin, whose sensibility becomes exalted by the coating of plaster it has received. The respiration

grows tardy and profound: a mark of the sedative action, commenced by the blood, which becomes modified in its composition, to be subsequently imparted to the nervous system.

The masses of muscle upon the shoulders are seized with involuntary tremors: an indication of diminished calorification.

The visible mucous surfaces, the Schneiderian, conjunctive, and buccal, reflect a red violet tint, not inflammatory: another sign of the chemical modifications the blood is beginning to undergo.

The pulse at this time is full and strong, and at the commencement bounding; the pulsations of the heart are energetic and vibrating; though this first re-action of the heart is not long in giving way to the toxical influence the blood, bathing and impregnating it, has received, causing its vigourless contractions to have no more effect than to propel the fluid into the arteries in too small jets to fill them and solicit their re-action.

Some horses stamp and paw and manifest other symptoms of cholic, which are ascribable to the congested asthenic condition of the vascular system of the bowels.

The appetite, which may keep good for the first day or two, afterwards fails, shewing the same state in the vascular system connected with the organic functions.

The animal staggers in his walk, with difficulty even maintains himself on his legs, and in the stable lies at full length, refusing to rise when urged to do so. Sometimes even, particularly towards the conclusion of the experiment, the animal is unable to rise: a sign of the loss of muscular energy induced by deprivation of the vitalizing properties of the blood. These primary symptoms furnished by the nervous, vascular, muscular, respiratory, and digestive systems, and by the calorific function, become simultaneously aggravated as the experiment is prolonged, though some are more marked than others.

For example, the respiration speedily becomes difficult and blowing, and yet slow in its rhythm; which forms a singular contrast with what we witness in general from failing in the nervous system, that being ordinarily attended with accelerated respiration: the acceleration being in ratio to the difficulties of sanguification, in order that compensation may be made, by the increased number of respirations, for the diminished quantity of air inspired, or for the extent of surface left for the blood to become changed upon.

But in the present case it is not the respiratory organs that are at fault; it is the blood itself, charged as it is to saturation with matters of combustion of which it cannot disencumber itself through the cutaneous channels, and which at every fresh inspiration receives with the air, in place of an element of revivification, a fresh and more intense altered condition, the consequence of sur-oxyda-

tion of its component parts, with the possibility of proportional elimination of the oxygenous products.

In such a state of things, although the organs of sanguification may, so to express it, appeal to the nervous system, whence they derive their functional aptitude, the spinal marrow, struck with stupor through the circulation of carbonized blood, remains insensible to this physiological excitation, and no longer responds by reflex action to the wants of the organic apparatus soliciting it.

Hence, the remarkable tardiness in the respiratory movements, in spite of the difficulty attending sanguification; a difficulty continually increasing, as indeed the poor animal feels conscious of: witness his distressing looks, without the smallest power on his part to remedy it.

While the respiration continues disordered and embarrassed, the bronchi become filled with a spumous serosity; which is nothing more than condensed pulmonary transpiration, more abundant than natural on account of the suppression of the cutaneous perspiration (which that of the lungs makes up) accumulating as liquid within the bronchi, both on account of its being in abundance, and from the tardiness of the respiration, which gives no time for the sufficiently ready removal of the columns of air that ought to become charged with it. And so from this sort of inertia or paralysis of the lung interfering with its action, in concert with that of the expiratory muscles, the auxiliary agents of its function, the condensed excretion becomes as a foreign body obstructing the aerial canals, operating as a fresh obstacle to sanguification.

This difficulty of sanguification, which is the principal phenomenon in this curious experiment, is again recognizable through two prominent symptoms; to wit, the nature of the gases exhaled from the pulmonary surface, and the diminished calorification. In the beginning of the experiment, what is very remarkable, the pulmonary transpiration, which is more than double the natural quantity, compensates pretty well for it, at the same time that the proportion of carbonic acid becomes considerably augmented in the air respired. But this effect of re-action proving insufficient to depurate the blood of its sur-oxyde saturating properties, the amount of the combusted carbon exhaled with the air soon diminishes, and with it falls the temperature of the body, which is, in fact, nought but an expression of the condition of the respiratory functions.

It may well be imagined that under so many opposing influences the nervous actions grow dull, the muscular weak, until at length the animal sinks without the power of re-action, and by little and little fails altogether, like a lamp going out for want of oil: a comparison the more just in the present instance, from the circum-

stance of death following the inability to continue respiratory combustion.

Post-mortem examinations fully confirm that this is owing to the carbonization of the blood, which is the principal, predominant, and primitive and continuous cause of all the organic disorders which successively induce the cessation of the vital functions. Everywhere, the blood presents a black pitchy character, imbuing all tissues in which it appears with the same; a certain sign of super-saturation with the principles of combustion, the same as happens in asphyxia. So that the death that supervenes, on the application of any plaster over the entire cutaneous surface of the body, is a veritable *asphyxia*, identical with pulmonary asphyxia.

Now, let us see if these curious results in any way tend to the interpretation of spontaneous pathological phenomena daily coming under our notice.

The suppression of perspiration has at all times been thought to have a good deal to do with the production of disease. Without doubt this has been exaggerated. But, allowing this exaggeration, is it not admitted by all practitioners that causes which act through the medium of the skin are susceptible, in sufficient degree, of being appreciated in the circumstances ushering in the development of very many diseases, especially those characterised by any active flux of the visceral organs? For example; is it not an incontestible pathological fact, that catarrhal, bronchial, pulmonic, and pleuritic affections;—congestions of the most alarming description in the vascular abdominal system of the horse;—inflammations of the peritoneum and womb supervening on parturition;—catarrhal inflammations of the bowels, even congestion of the feet, &c. derive their origins, in a great number of instances, from cold applied to the skin in a state of perspiration? What happens in the organism after the application of such a cause? Is its effect instantaneous? Let us see. Immediately on the repercussive action of cold being felt by the skin, the vascular system of internal parts finds itself filled with the repelled blood. Though this effect, however, be simply *hydrostatic*, the pathological phenomena consecutive of it are far otherwise.

It is quite certain that, in the immense system of communicating vessels forming the circulatory apparatus, whenever any large quantity of blood flows to any one particular part of the body, the other vessels of the system must be comparatively empty. The knowledge of this organic hydrostatic fact it is that has given origin to the use of revulsives under their various forms, and we all well know how much service we derive from their use.

But if this hemastatic condition operates actively as a cause in the production of inflammatory maladies, internal or external,

according as perspiration has or has not been driven in, for certain it is not the only cause; and, in proof that it is not, we may adduce the habit of the local disease not appearing immediately after the application of the repellent cause upon the skin. Ordinarily, some time elapses, days even, before any well-defined disease becomes manifest in its seat. For a time the symptoms denoting actual disorder of the organism remain general, and during this interval the most rigid examination, the profoundest study of the interior organs fails to elicit the *locality* of the disease, since as yet it is not fixed to the spot it is about to take possession of. There is, in fact, for inflammatory diseases, such as in our nosography go by the names of pneumonia, pleurisy, enteritis, and even acute founder —there exists, we say, for such diseases, a veritable period of circulation—a sort of *nascent state*, during which the pathogenic condition exists in the organism, though it has not yet determined on its local disturbance. Well, in what does this pathogenic condition consist?—whereabouts is it seated?

The general and undefined mode it has of shewing its presence in the organism points this out. Immediately subsequent to the action of the cause, the *actual* seat of the generative condition of the disease about to appear is the blood: this fluid it is which, having become actually modified in its chemical composition under the influence of the cause that has momentarily obstructed the cutaneous exhalations, carries about everywhere with it the disordered condition, and ultimately gives rise, through it, to some local disease, as a sort of eruptive effort analogous in its object, but often less salutary in its effects; owing to the functional importance of the part attacked, to the external eruptions produced by the presence in the blood of virus which alters both its dynamic and chemical properties.

But what is the nature of this alteration? In this case, every clue to the solution of this question fails us. We know well, when the experiment is designedly prolonged, the blood grows black, as in asphyxia, through the combination with it of carbonic acid, whose presence is opposed to the absorption of oxygen. But what relation is there between this chemical alteration of blood here and the modifications in composition it may undergo under the influence of instantaneous suppression, but not persistent, of the cutaneous exhalations and secretions? Are these phenomena of the same order? Is the second equally as simple as the first? We think not. The influence of cold upon skin raised to a high temperature is doubtless more complex in its *modus operandi* than that of a general plaster covering the skin. There is a something in this phenomenon which escapes our penetration; though, in spite of the obscurity in which a part of this question is involved, it is

not to be denied that the experiments of Dr. Fourcault tend, on the whole, towards their elucidation.

These experiments discover the primitive form and almost the nature of the alteration the blood undergoes under the influence of the cessation of the functions of the skin. They demonstrate that under these conditions the regularity of the course of this fluid is disturbed—that it has a tendency to accumulate and stagnate within the internal visceral organs, witness the abdominal pains so frequently consequent on the application of plasters upon the skin, and the congestions of the abdominal and pulmonary vascular systems met with almost always on opening animals who have been *suffocated* through tar or pitch plasters.

They prove, in fact, the thorough aptitude of impression of the nervous system to blood altered in its chemical properties, while they afford us an explication of the phenomena of depression, and muscular prostration and weakness, which accompanies the beginning of disease consecutive on the operation of cold.

But let us pass from generalities to endeavours to establish some more direct connexion between the results of the physiological experiments we have recounted, and the effects which make their appearance on the commencement of inflammations and other diseases consequent on the action of cold on the skin in a state of perspiration.

As soon as the repercussive influence of this agent has become sensible and given rise to general disorder of the organism, the visible mucous surfaces are seen to grow injected and to exhibit a red violet tint; the animals become dull, affected with general tremors; the skin dry, opaque, tight, and the coat pen-feathered; the pulsations at the heart energetic and palpitating; the pulse strong and bounding; the respiration tremulous, nervous, irregular in its rhythm, and somewhat accelerated; the movements are performed without energy; even the walk is vacillating and automatic; both food and water are refused, &c.

There exists nothing in this *ensemble* of symptoms defined; it is disease breeding. And how often do we put a stop to its ulterior development through restoring the functions of the skin by mere (dry) friction, putting on thick clothing, exposing to exciting fumigation, applying temporary revulsives in the shape of occasional sinapisms, administering diffusible stimuli made warm in drenches, trying every means to *force* the skin, and so tend, by the re-establishment of its exhalent functions, to permit the elimination of blood saturated with carbonic matters opposed to the absorption by it of oxygen?

Do we not here perceive, so to express ourselves, the evil enter and depart through the skin?

Anasarca in horses is, in an immense majority of cases, the result of sudden refrigeration of the skin covered with sweat. Under the astringent and repercussive influence of cold, the capillary system of the skin all at once shuts up. The blood carried to it by an excentric circulation, suddenly repulsed upon the interior, becomes concentrated within the capillaries of the cellular tissue, whose exhalence in consequence grows all at once extraordinarily active. Hence the mass of serosity which we behold infiltrating the meshes of this tissue, and which, obedient to the laws of gravity, accumulates on the same level in the most dependent parts of the limbs, as well as of the head and trunk. Among the phenomena accompanying this, there is one constant in its presence even from the beginning of the disease, whose interpretation has escaped us prior to these last experiments. We speak of the petechial eruption which appears upon the mucous surfaces, under the form of either deep red confluent spots, or of large black marbled patches; so diffuse and approximated in some cases, that the surface of the membrane presents one uniform black stain. These petechiæ are such constant accompaniments of subcutaneous œdema, that they may serve, in cases of doubt, as a key to the character and real nature of these swellings.

And what are these spots themselves, if not the indication or exterior exudation of the changed material contained in the blood, therein created under the influence of the suppression of the cutaneous exhalations?

In diseases in which, from other causes, the blood is altered in its composition, do we not witness the same appearance of petechial eruption analogous to what we see in anasarca? And is it not sufficient to cause to appear, almost at pleasure, a like eruption, to submit animals to an absolute abstinence for some days? Under the influence of prolonged *combustion*, without reparation of the combustible elements, the blood grows black, and the particular alteration it undergoes is implied in the petechial eruption upon the mucous surfaces.

This alteration of the blood, which is expressed, from the commencement of the anasarca, by an eruption of *petechiæ* upon the mucous surfaces, is evidently of the same nature as that which takes place under the influence of the application of plasters upon the surface of the skin; less intense only, as well as less permanent, on account of the possible return of the functions of the skin on the cessation of the cause which has suppressed them, though in some cases deeply rooted, and tenacious enough to entail the cessation of vitality, notwithstanding the respiratory function may be exerted to its utmost, be it through the forced dilatation of the nostrils or through the operation of tracheotomy.

Is not this inauspicious termination of anasarca a proof of the modification in composition the blood undergoes under the influence of the suppression of the cutaneous exhalations?

This proof is put in a more satisfactory light by the account given by M. Roche-Lubin of some young lambs which were exposed, after being shorn, to a humid icy cold succeeding upon summer heat. These animals all died; and their autopsies disclosed nothing further than a blackened condition of blood throughout the whole circulatory system, with stagnation in some organs, such as the liver, the spleen, or abdominal vascular system.

Is not this idiopathic disease which supervenes on the repercussive action of cold very analogous, both in its causation and its accompanying phenomena, to that which we produce artificially by suppressing the exhalent functions of the skin?

From the aforegoing disclosures, which might be multiplied if there was need of it, we learn that the regularity or perversion of the functions of the skin exercise an all-powerful influence over the conservation or derangement of the health; and that very many diseases can be traced to no other origin than the interruption, more or less persistent, of these functions.

Recueil de Médecine Vétérinaire, April 1850.

PROCEEDINGS OF THE COUNCIL OF THE ROYAL COLLEGE OF VETERINARY SURGEONS.

Quarterly Meeting, held 25th June, 1850,

FOR THE PURPOSE OF "receiving the Report of the Deputation sent to Edinburgh;" "electing a Registrar;" "voting an Allowance to the Secretary;" and "other business."

MEMBERS PRESENT:—Messrs. Henderson, Simonds, Wilkinson, Burley, Sylvester, James Turner, Cherry, sen., A. Cherry, Kent, Tyndal, Field, Percivall, and the Secretary.

In the absence of the President (Mr. Thos. Turner), Mr. Tyndal (one of the Vice-Presidents) was voted into the chair.

The minutes of the last meeting were read and signed by the Chairman.

The Report was then read by the Secretary.

"*Report of the Deputation to Edinburgh.*

"YOUR Secretary, in accordance with the directions of the Council, attended the meeting of the Board of Examiners for Scotland

this year. Nine gentlemen presented themselves for examination, and eight received the Diploma of the College.

"The section of the Board acting for Scotland is at present short by three Members; Dr. Knox having left Edinburgh; Dr. Mercer having resigned on the same account; and Mr. Lyon, of Glasgow, because the fee was not sufficient to induce him to go the distance. Two other gentlemen have memorialized for an increase of fee, or travelling expenses, on account of the distance they have to come.

"Under these circumstances the Secretary begs to submit to the consideration of the Council, whether the vacancies should be filled up, or whether this opportunity should be taken to altogether re-organize this section of the Board: the grounds on which the latter suggestion is offered are, that the examination did not appear to be conducted with that degree of dignity and deliberation essential to the advancement of veterinary science, and that gentlemen might be selected whose personal character and position might add weight to the decisions of the Board. As the task of individualizing would be very invidious, the non-desirability of doing so will at once be obvious, until the Council shall have decided on their future proceeding.

"Your Secretary had several interviews with Professor Dick, and received from that gentleman an official invitation to his examination dinner, which he accepted.

"The Professor expressed the best feeling towards the Royal College of Veterinary Surgeons, and trusted that any rivalry between it and himself would be only to advance the profession; but stated that, having prevailed on the Highland and Agricultural Society to grant him a separate Board of Examiners, he could not at present secede from it.

"Your Secretary, however, trusts he will, by and by, see the desirability of doing so; and would venture to suggest to the Council, should a re-organization of the section of the Board acting for Scotland be decided on, that Professor Dick's opinion be taken, from his intimate knowledge of all parties in the vicinity as to the eligibility and qualification of such gentlemen as may hereafter be selected for so onerous a duty.

"E. N. GABRIEL, *Secretary.*"

"LONDON, June 20th, 1850."

The Report was received, and ordered, for the consideration of the Members of Council, to be printed.

THE APPOINTMENT OF A REGISTRAR next came before the Council. It was thought there was no occasion for any separate appointment of the kind; but that the duties thereof might be, with

advantage, placed in the hands of the Secretary : at the same time, there was no desire to add to the duties of that gentleman without augmenting the allowance set apart for those duties. Others, however, being of a contrary opinion, it was finally settled that the appointment should remain distinct. There was no question about the utility of, and advantages derived from, the registry of all duly qualified members of the profession ; and, by some, it was imagined that good might arise to the practising members from the annual advertisement of their names in such a paper as *The Times*. This latter suggestion, however, did not meet with general concurrence.

THE ELECTION OF REGISTRAR fell, as before, on Mr. Arthur Cherry.

THE ANNUAL ALLOWANCE TO THE SECRETARY next occupied the Council. It was universally acknowledged that the present sum (£50) was an inadequate one for the correct and able manner the secretaryship had been conducted by its present talented holder, and that such allowance called for augmentation to the extent the present limited finances of the College admitted; in accordance with which general feeling, a further sum of £25 was set at the disposal of the Secretary. During this part of the discussion, it was aptly remarked that the registrarship likewise called for their notice; accordingly, the same sum was placed at the command of the Registrar.

Special Meeting, held 17*th July*, 1850,

"To consider the Report from the Deputation to Edinburgh; to elect two Auditors; and to receive the Legal Opinions on the proposed By-laws."

Present: Messrs. Henderson, Ernes, Wilkinson, Cherry, senior and junior, King, James Turner, Braby, Godwin, Spooner, Percivall, Goodwin, Nice, and the Secretary.

In the absence of the President, Mr. A. Cherry, a Vice-president, was requested to take the Chair.

The minutes of the last Meeting having been read by the Secretary,

THE REPORT drawn up by the Secretary, who was the person deputed at a former Meeting of Council to go to Edinburgh, was then read again. It will be found in the proceedings of the last Meeting, at page 471.

Considerable discussion having taken place in reference to the Report, the affair was ultimately concluded by a motion made by

Mr. Ernes, "That the present Edinburgh Board of Examiners be dissolved."

The next business was "the election of two Auditors." This motion, however, by dint of some suggestions thrown out on the occasion, was deferred.

THE LEGAL OPINIONS ON THE PROPOSED BY-LAWS, which had been received since the last Meeting, were then read by the Secretary. The barristers to whom they had been submitted for judgment were, Sir Frederick Thesiger, Sir John Jervis, and Mr. John Jago. These gentlemen differed very materially in their opinions on some of the By-laws taken into their deliberation; and this difference was, unfortunately, found to pervade those very points on which it was most desirable that decision, equitable and final, should have been come to. Some few cursory observations were made by several gentlemen present in reference to the above alluded-to opinions; the length and variety of them, however, were found to preclude all possibility of coming then, and particularly at so advanced a stage of the proceedings, to any thing definite concerning them: it was, therefore, judged expedient that the opinions, which were in writing, should be printed and circulated among the members. To this was added, that it would be as well, at the same time, to reprint the proposed By-laws themselves; the copies formerly distributed appearing, in some instances, to have been mislaid and lost.

Notice of motion was given by Mr. Wilkinson, that steps be taken to, for the time to come, take down and print in detail the proceedings in Council, with a view of the same being distributed among its members.

For the convenience of members coming long distances out of the country, it was asked by the Chairman, if there would be any objection to an alteration of the days of meeting of Council from Wednesdays to Saturdays or Mondays. In answer to this request, a general wish was expressed to afford any and every accommodation to the gentlemen in question; and Monday being considered, altogether, of the two days named, the more convenient one, that was fixed for the next and every subsequent meeting on which the By-laws, and the legal opinions on them, shall form the subject of discussion.

THE VETERINARIAN, AUGUST 1, 1850.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

WE were cut short in some observations we were desirous of making on the subject of *distemper* or *influenza* last month by lack of space. We now resume our pen; and we feel the more pleasure in so doing, from having in the interim received a very interesting communication on it from our friend Mr. Gabriel; wherein we hail with delight some opinions which carry with them not only the aspect of novelty, but bear upon their face the impress of experience and truth. Mr. Gabriel regards influenza to be "to the adult animal what strangles is to the colt"—"a kindly effort of Nature to relieve the constitution of some impurities noxious to it*." This theory puts us in mind of a conversation that lately took place between the writer of this and a gentleman conversant in horse rearing and training. "It's all very well," he said, "to turn your young horses into straw-yard or loose boxes or paddocks until they arrive at an age fit for use, with a view of keeping them in health; but, do what you will with them, after all they will *contract some distemper or another;* if not before, at all events soon after, you come to stable them." There was too much truth in this remark for us to pretend to meet it with a rebuff: we however parried, as we conceived, a good deal of the force of it by retorting that, although we could not deny the continuing liability of the young horse to the distemper, yet, by postponing the malady until the animal had become *acclimaté* to his situation, or else had arrived at an age when his powers were better able to withstand the disease—in the promising language of Mr. Gabriel, better able to cast off the "impurities"—we placed him, relatively to this unavoidable disorder, in a more favourable position.

Now, meditating on the fact of hardly any young horse escaping the disorder in question, and connecting this with the observation so often made, that the animal "is the better" for having had such disorder; and recollecting that strangles, in some one of

* See his paper in our present Number, page 437.

its forms, if not in its ordinary one, is frequently present with such disorder, there is, in our opinion, great show of reason for the view Mr. Gabriel has taken of the *influenza* or *distemper*. At the same time, we must remember that horses may have strangles at one time and influenza at another; that we do not know that strangles proves either a preventive or a mitigative of influenza; but we know that a horse may have influenza twice and even thrice, whereas strangles rarely occurs more than once. Again, we know that there are years and seasons in which strangles is epidemic; others in which it is rarely or never met with. But whether this has any connexion with the prevalence of influenza, we, at the present moment, are not prepared to say.

The next point to which we shall advert is the *treatment* of influenza. We have had occasion before to remark, and we repeat our observation, that the disease, in its usual or general form, is so mild, or at all events so controllable, that we may well exclaim with Mr. Gabriel, " we know of no set of cases with which we should so much like to be inundated as this." Nature, disordered after so lenient and benignant a manner, simply asks for aid from medicine to act in concert with her in, as it would appear, eliminating " impurities" out of the constitution; and the process directed to so sanative an end is, as far as we are concerned, a very simple and plainly indicated one; nor does the accomplishment of it appear to cost Nature herself any great effort. It is only when the operation proceeds unfavourably; when untoward symptoms arise indicating that the matters of which Nature is desirous of ridding herself are not forthcoming through the ordinary channels, but lurk behind, circulating in the system; or, under circumstances giving rise to fresh contamination; or when parts become attacked with disease in consequence of their proximity to those already disordered, that influenza grows of vital concern to the animal and his medical attendant.

We seem now, on all hands, to be agreed that blood-letting in ordinary influenza is apt to be productive rather of harm than good: it is a remedy nowise called for under such conditions, and one rarely had recourse to without subsequent regret. But should " a more severe disease" supervene, " this," as Mr. Gabriel adds, " may be now and then pneumonia: and now bear in mind the

striking evidence afforded how far the treatment is to be regulated by the character of the disease. While you had influenza, your patient would not bear bleeding; the loss of even but a moderate quantity would impair, if not impede, the cure; debility would supervene, and death might follow. *But if, at the end of the second or third day, pneumonia should supervene, you may take blood with as much impunity as if no previous disease had existed.*"

In this last sentence it is that Mr. Gabriel and us are at variance in our theory. We have for some length of time held opinions in consonance with the one here adduced; but experience has not warranted the retention of them. We have of later years been in the habit of regarding the disease of pleura and lung, either concomitant with or consequent on influenza, as inflammatory action of the same asthenic or specific nature as that which constitutes, in the mucous membranes, influenza itself, and we have been as much afraid to draw blood for the one as for the other; and we have felt satisfied that our practice—which has been principally among three and four and five year old horses—has proved more successful when the phleam has been withheld. We feel fully sensible what remonstrance, or even reproach, we run the risk of incurring at the hands of our brother practitioners, and especially of the older ones, for refusing to let blood in pleurisy or pneumonia. We can only reply, by repetition, that the non-bleeding practice has succeeded best in our hands. Nor can we account for our success by any other reasoning than that of the pleurisy and pneumonia, &c., we have to treat being, though "a more severe disease," still one of an *influenzal* taint or type, from consisting in inflammation—be the inflammation of what part or organ it may—arising and running its course in a constitution already tainted or rendered "impure" by the presence or pre-existence of influenza. Or, to set our explanation in accordance with Mr. Gabriel's views of the nature and tendency of influenza, we may conjecture that the "impurities" are still remaining, uncast off, in the system; and that Nature, baulked and defeated in her ordinary course, has sought other channels—the pleura, lungs, liver, &c.—through which she might succeed in eliminating them.

For many months past, several members of the medical profession have been quietly at work in the formation of a society for the investigation of epidemic diseases. The recent severe visitation of cholera, the diversity of opinion among medical men as to its origin and treatment, and the apprehension of another visitation, have given a strong stimulus to the undertaking, and created an interest in its success, not only in the profession, but among the intelligent classes of society.

The London medical journals have hailed the new association, which has received for its name The Epidemiological Society, in language of approbation and encouragement. It has certainly commenced auspiciously. Dr. Babington (the much respected translator of Hecker's works on the Epidemics of the middle ages), an honoured member of our own (veterinary) Board of Examination, has consented to preside over the Society, and the list of Vice-Presidents contains some of the first names in the medical profession. The framework of the Society is constructed on a liberal and comprehensive scale. It is not intended that the Council should consist exclusively of medical men, but should include the names of scientific gentlemen whose pursuits enable them to further the objects of the Society. The botanist, the chemist, the meteorologist, the microscopical observer, the veterinary professor, the traveller, as well as gentlemen connected with sanatory and statistical inquiries, have all been solicited, and have entered with ready consent into the service of a Society which, we trust, will prove a benefit to mankind, if not to brutekind, at large.

It is obvious that the proceedings, in order to be really useful, must be attended with considerable expense; and we are glad to observe a feature which is unusual in scientific societies, and which we are sure will be liberally appreciated by the public; viz. that the funds of the Society are not to be limited by the number of annual subscriptions of one guinea each, paid by the working members, but that the donations of the affluent may be placed at the disposal of the Society.

We heartily wish the undertaking success, and rejoice in the reflection that, should the cholera again break out among us, a band of zealous men are already enlisted to meet the first advances

of the foe by an intelligent and, we trust, well-directed plan of defence. We need hardly add, that veterinary science, ever the handmaid of medicine, will feel it her duty to put her best foot foremost in the service of a cause of such vital import both to man and beast. Fearful and fatal epizootics have raged in our stables and pastures. The late pleuro-pneumonia among cattle furnishes a signal example. This, and like instances, will be taken into account. Comparative views will be instituted between the several epidemic affections running through the animal creation; and it is hoped, and may be confidently expected, that in the end such investigations will lead to most important and beneficial results.

MISCELLANEA.

Exposing Diseased Cattle for Sale.

At Guildhall Police Court, Mr. Showler, the Inspector of Smithfield Market, applied for the Magistrate's order to destroy some sheep which had been seized that morning, having been brought up in waggons and placed in the pens, but the salesman would not receive them, although he had a consignment note, which he refused to shew to the police. Alderman Carden asked where the sheep were now? Showler replied, that they were in the hands of the police. Russell, one of the officers of the market, stated that he understood these were part of a flock of six hundred from the north of Spain, which were seized as soon as landed, by the Government, about four months ago. Two hundred of them had died, and been buried; and these were some of them that had been sold by Government to defray expenses, at the rate, he understood, of 3*s*..6*d*. per head. Alderman Carden said he thought it was not very discreet on the part of the Government authorities to sell any of them, if it was merely to cover their expenses.

George Russell, 34, said that about twenty minutes past eight he was in Smithfield market, and observed two carts full of sheep opposite the pens of Mr. John Hill. Thirty-eight were put into pens, and he saw that they had the "scab" very bad, and were much emaciated; in consequence of which, he called the attention of another officer to them, and they were removed from the market. Alderman Carden, "Do you think they were infectious?" Russell: "I certainly do." Alderman Carden: "To whom were they consigned?" Russell: "To Mr. Hill, who admitted that he had the

consignment note, but refused to shew it; upon which I warned him not to destroy it, and told him the present application would be made." G. Trew, 26, said he was called to look at the sheep, and found them in a very bad state; they had the "scab," and some of them had the wool off, while others were scarcely able to stand. He helped to take them to the Ram-yard, and examined them; and, from their appearance, he should say they had had the small-pox, and some of them were still labouring under that disease. Mr. Nice, the veterinary surgeon, was called; and, after examining them, he said they were totally unfit for food, and were still labouring under the disease of small-pox. Alderman Carden said it was no wonder that legs and shoulders of mutton were sold so extraordinarily cheap when sheep could be purchased for little or nothing. He therefore ordered that the thirty-eight sheep should be destroyed, and that summonses should be taken out against Mr. Geer for sending the sheep, and against Mr. Hill to produce the consignment note on Tuesday next. The usual order was then made out for the destruction of the sheep, and handed to the officers.

Wolf Hunting.

Mr. Masson tells us that he got a cub only fifteen days old; that he reared him on dry bread and *soupe maigre;* that he had him for two years; that he hunted with the dogs, and barked, and imitated them in giving tongue, and never shewed the least disposition to do mischief. When wolves once taste human flesh, they become perfectly ferocious, and will ever afterwards attack a man when they meet one alone. They pass by the flock and fly at the shepherd. The Italian wolves are remarkably fond of asses. It is strange that they do not rise *en masse,* and possess themselves of the town of Bologna, it being a well-known fact that the much-esteemed Bologna sausages are all made of that patient and very ill-treated animal.

Extraordinary Anecdote of a Fox.

Lately, a fine male fox made his appearance among a flock of lambs belonging to a widow, at Owthone, near Putrington, in Holderness, and became so much attached to one of the lambs that he could not be driven away. The most extraordinary part of the affair is, however, the fact that the lamb also declined to be parted from its strange companion; and now the pair are seen daily, seldom far from each other.—*Hull Packet.*

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LAMENESS IN HORSES.

By WILLIAM PERCIVALL, *M.R.C.S. and V.S.*

LAMINITIS.

Fever in the Feet—Acute Founder.

OF THESE THREE APPELLATIONS for the same disease, *laminitis* is the name most in accordance with our modern nomenclature; *fever in the feet*, the one most in common use, and, indeed, most expressive of the translated form of the disease; while *founder* is very significant of the utterly helpless, and but too often hopeless, condition of the patient. Calling the animal *foundered* literally signifies, in the language of our dictionaries, that he is "in a ruined or ruinous state or condition;" a meaning assumed on the authority of our oldest writers. Chaucer says,

"His hors lepte aside and *foundered* as he lepte;"

that is, fell to the ground *(fundus)* or grounded, the same as a foundered ship is said to do. For general use, I prefer the name *laminitis*, on account of its scientific origin, as well as for its brevity; although I am not quite sure that it is comprehensive enough in its import to be free from objection.

HORSES, THOUGH THE ESPECIAL, DO NOT APPEAR TO BE THE EXCLUSIVE SUBJECTS of the disease. In THE VETERINARIAN for 1835, Mr. Ball, of Launceston, has related the case of a milch cow who, after calving, "caught a chill, which first settled itself in the udder and partly in the feet;" but was subsequently, "by some topical application" to the former, translated into the fore feet, "causing the poor beast to hobble along like a foundered horse." The cow recovered under Mr. Ball's treatment, though it was administered late. Such comprises the substance of a narrative which would have been more valuable had it been more circumstantial and amplified. D'Arboval accounts for the disease being especially seen in the solipede animal, from the hoof in which

the foot is inclosed being one single, hard, resisting case, insusceptible of expansion—in his own words, "qui n'est pas *susceptible de ceder*"—and from the foot, in consequence, being more likely to breed such a malady than one that is cleft or divided after the fashion of the hoof of the *didactyle*.

THE FORE ARE THE FEET COMMONLY ATTACKED BY LAMINITIS. Otherwise, all four feet are usually seized, simultaneously, with the disease. The hind feet, to the exemption of the fore, rarely suffer. The late Mr. John Field relates two cases* of such an occurrence. And Hurtrel D'Arboval† has detailed the symptoms of laminitis in the hind feet, as distinguished from those characteristic of the disease of the fore. I have had an example of the disease in one fore foot to the exclusion of the remaining three; and in the progress of the case the coffin-bone protruded through the horny sole; notwithstanding its fellow (fore) foot remained sound.

For the reason why the fore rather than the hind feet should become obnoxious to laminitis we must revert to the larger proportion of the burthen they have to support, the weight of the head and neck being added to that of half the body, and also to the concussion they sustain in action, as compared with that undergone by the hind feet. When horses are standing on board of ship—a situation in which the disease, or the predisposition to it at least, has strongly marked itself—from rocking about with the motion of the ship, the fore limbs, as props and stays to the body, are undergoing more than the hind; and their duty under such circumstances becomes, if long continued, both laborious and painful, in which condition the disease, or the aptitude to take it, ensues. The battering the fore feet receive in action, and particularly when they come flat down upon the ground, is a strong reason for their greater susceptibility to disease than the hind, the force of whose tread under exertion is sustained principally by the toe of the foot.

THE BREED OF HORSE AND KIND OF FOOT most liable to take the disease, from my own observation, I should pronounce to be the under-bred horse and cart-horse, possessing the characteristic foot of the family, viz. the flat, broad, spreading foot. When high-bred horses, having upright oblong feet, become attacked with laminitis, there generally exists some manifest exciting cause. This is a point, however, on which there is some wide difference of opinion: D'Arboval asserting that the narrow foot, clothed with a hard, tough, compact hoof, is the most susceptible, while Giraud is of the same opinion as myself; remarking, however, that whenever the disease does attack the strong foot, it is more painful to

* In his "Posthumous Veterinary Records."

† In his "Dictionnaire Vétérinaire;" article *fourboure*.

bear. Mr. Spooner, in his edition of White, says, "it most frequently attacks horses whose crusts and laminæ are weak and very obliquely placed." And, if we come to reason on the matter, it seems but natural that such should be the case, since in such kind of feet the laminæ are most called into action. In feet disposed to take the disease, shoeing may have something to do with its production. Horses transported from mild or cold climates into hot countries are disposed to breed the disease. D'Arboval informs us such occurrences are not uncommon in Spain. The taking of the bearing of the shoe off these parts of the sole, joining the crust, which are able to bear it, and throwing the entire stress upon the edge of the crust and upon the nails, as too commonly is done in ordinary shoeing, may likewise conduce to the production of the disease.

THREE KINDS OF LAMINITIS are recognised in practice, viz. the *acute*, the *sub-acute*, and the *metastatic;* the *chronic* being rather the declining or convalescent stage of one of these three kinds of disease than a distinct species or variety; and the *epidemic* only an occasional, and I believe but a rare, character assumed by laminitis.

Acute Laminitis.

Were a veterinary surgeon asked the question from what disease a horse experienced the most suffering, he would, methinks, require little reflection before he determined in favour, or rather in disfavour, of the one I am about to describe. There may be, and no doubt are, other morbid conditions from which the animal suffers most acutely for the time; but there is no one under which his suffering, while it is poignant in the extreme, is apt to be so protracted as laminitis. At this we have no reason to be surprised, when we come to remember that the impaired tissues are peculiar in their texture, besides being placed under peculiar conditions, in being situate between two hard bodies—the hoof without and the coffin-bone within: so that, when the tumour of inflammation would take place, the opposition of these unyielding bodies, and consequent squeezing of the nervous filaments, morbidly sensitive as they now are, produces pain in the extreme, probably some such in character as whitlow produces in our own persons. And this exquisite pain it is, combined with the situation in which it is felt, that gives rise to a series of symptoms at once distressing and peculiar in their nature.

THE APPROACH OF ACUTE LAMINITIS is not, as has been represented, at all times *sudden;* more commonly some symptoms of lameness or fumbling going will usher in the attack. A marked difference will be discovered in the animal's gait: he will step

shorter than usual, or, as grooms are apt to express it, "scramble," treading more upon his heels than upon his toes. D'Arboval has remarked that laminitis never *immediately* succeeds the application of the cause giving rise to it; but that a horse coming off a journey, or trying feat of any kind, will stand in the stable for an hour or more before the laminitis, the consequence of it, becomes developed. This, Professor Rigot accounts for by supposing that exercise augments the capillary circulation of blood through the foot, while rests proves unfavourable to it. After great exertion, the plantar vessels become surcharged to that degree that the veins are rendered incapable during subsequent repose of relieving the capillaries; hence congestion, followed by inflammation.

The Symptoms of acute Laminitis—supposing the disease to be, as it usually is, confined to the fore feet, and to be perfectly developed—are of so marked and peculiar a character, that they can hardly, by a person pretending to any experience, be mistaken. The horse presents himself in a paroxysm of pain. Should he be standing, his posture is crouched, or "all of a heap," as the stable phrase goes, and he is panting and blowing from the terrible agony he is enduring. His general aspect and position is at once striking and characteristic. His hind feet are advanced underneath his body as far as he can get them, in order that he may relieve his painful fore feet all he can from bearing any portion of the superincumbent weight. If urged, or rather forced, to step forward—for walking is out of the question—most unwillingly he makes an effort to do so; and his method of accomplishing it is expressive of no disease save laminitis. Instead of advancing one fore foot as ordinarily, he commences by shuffling his hind feet still further underneath him, and then either steps, first with one fore foot and then with the other, most gingerly upon his heels, or else with an effort lifts both fore feet at once, and makes a sort of leap forward. In this manner he accomplishes progression to a very limited extent, after being compelled to muster all his courage to do so If one (fore) foot suffer more than the other, he will shew it in these efforts to move, if not at the time he is standing still. Should the patient at our first visit be found lying, his efforts to rise upon his painful feet are as singular and methodical as his attempts to walk. He is probably lying, stretched out upon his side, pawing and scraping with his fore feet, from the pain in them. The moment he finds himself compelled to rise, he rears himself up upon his side, gathers his hind feet underneath him, and, making them the *fulcra*, with a resolute and powerful effort he springs up upon his hind quarters, all the while contriving to keep his fore feet aloof from the ground, or, at all events, from taking any of the bearing; and he is no sooner up than he resumes the same crouch-

ing posture afore described. This commotion increases his sufferings, so that he pants now harder than ever, and quite sobs or grunts with pain. One would think that the recumbent posture would be that affording most relief to the poor sufferer: this, however, does not appear always to be the case; for in many instances the standing position is doggedly maintained to the last. The horse, although evidently in the greatest state of suffering, will not lie down; but will stand in one corner of his box, with his nose over his pail of water, pawing and scraping, either with one foot alone or alternate feet, all day long and all night long. On the other hand, some horses will stand at rest, or, at least, only shift or raise their feet, one or both of them, for the sake of getting ease. This variableness in regard to standing and lying down in the disease has led to some disputes among veterinarians of experience; such, however, as admitted of adjustment by the notorious facts that both parties were in a measure right and in a measure wrong*.

When the hind feet are exclusively affected, D'Arboval informs us that the attitude is altered. Instead of the fore feet being advanced and placed as much as possible upon the heels, they are directed backwards underneath the body in order to relieve the hind, which are still brought forward to support all the weight they can upon their heels. And the attempt to walk now becomes even more formidable than before; for, positioned as central props of support as the fore feet now are, underneath the animal, their removal costs him much more pain and effort. And, from being unaccustomed to bear so much weight, they remain not long in this situation before they become affected themselves with the disease.

This extension of laminitis to all four feet makes matters still worse. The standing becomes now so painful and insecure, that the patient is more likely to lie than to stand. The recumbent is a posture, indeed, so much at present preferred, that we have insuperable difficulty in rousing him up upon his feet. As for walking, he can hardly manage progression any how, and will not, indeed, attempt it.

The hoofs are hot. The inflammation is so intense, that heat is transmitted through the (nearly half-inch) thickness of the crust to our hand. The sole of the hoof, and the frog even, likewise feel hot. Blood has been seen to ooze from the coronet†.

Throbbing of the pastern arteries is another well-marked symptom. These are the vessels which supply the inflamed parts with blood. They are, under inflammatory action, in a state of fulness, and pulsate violently under pressure of the fingers. There is also *Fulness of the pastern and coronet,* and *tenderness,* sometimes, of

* See the discussions of "The London Veterinary Society," in THE VETERINARIAN for 1829, vol. ii, p. 39.

† "Posthumous Veterinary Records" of the late Mr. Field.

the sole as well. Indeed, D'Arboval maintains that the disease (*la phlegmasie appelée la fourbure*) itself reaches these parts, and the joints which they go to form as well. After a time the coronet loses its fulness, and manifests, especially on pressure, a sinking inwards. Sometimes the legs are swollen.

The pain, in addition to the unmistakeable evidence we have already had of it, may locally be made manifest by tapping the hoofs with some hard body, such as the handle of a smith's hammer, or, so far as the sole is concerned, by compressing it with the pincers. Altogether, it is of the most distressing character, disordering the whole system to that degree, that

Constitutional or *symptomatic fever* is the inevitable consequence. The animal is alarmingly ill; very much excited; will not look at food; feels hot all over; oftentimes is actually sweating through the agony he is in. His mouth is parched; his very breath is hot; his respiration is short, hurried, and painful; his pulse very high, and full and remarkably hard; his mucous membranes are all vascular and scarlet from irritation; parts of his body are in a state of tremor; he is continually changing either his position or situation in search of relief—his very countenance imploringly asks for it; and if it be not, in some shape or another, found and administered, there is danger, from the fever of irritation running so high, of the poor sufferer succumbing, or, at least, of being reduced to that deplorable condition wherein, human aid proving unavailing, it becomes a real act of humanity to recommend a pistol being presented to the patient's head.

DIAGNOSIS.—With symptoms so strongly marked as those I have described as characteristic of *laminitis*, persons acquainted with the disease cannot but express surprise when they hear of its occurring unrecognised, or of any other disease being mistaken for it. I have heard my professional predecessor say, the late Mr. Bloxham, that he was on one occasion called in by a veterinary surgeon practising in London, to be consulted as to the treatment of a horse suffering from supposed "inflammation of the *kidneys*." He found the patient upon his side, kicking and pawing in violent pain, and was told that "pressure upon the loins created great pain." Mr. B., however, suspecting what was amiss from finding the feet very hot, requested that the horse might be made to rise. This had been deemed impracticable. At length, however, after some fresh trials, with the usual difficulty and peculiarity of effort, the standing posture was effected; and no sooner was it accomplished than "the tale was told"—the nature of the disease was made manifest beyond a doubt. And this constitutes the best method of procedure whenever the animal is found lying, and any doubt impends as to what is amiss with him.

The heaving of the flanks and the dilated nostrils, indicating

apparent embarrassment in the respiration, is such as is apt to lead the inexperienced to suppose that the lungs or the pleura is the seat of disease. Any forced attempt to step or walk, however, would immediately dissipate any such notion as this; though it is possible the same might induce a supposition that the kidneys were the seat of disease. The standing posture and the attempt to walk, with reference to the fore feet being the parts in pain, would by a little attention speedily correct so flagrant an error in judgment; and if the hind feet were affected they would not be placed flat and firm upon the ground, as in nephritis; added to which, the diagnostic characters of disease in the kidneys will come to the practitioner's aid to remove all manner of doubt on the question*.

THE CAUSES OF ACUTE LAMINITIS are said to be various. There is one, however, among them so predominant and influential in its character that it must never be lost sight of; and that is, *work*, or what may be construed into violence done to the feet. A horse with high stamping action, going for any great distance or for any length of time upon a macadamized road, or hard ground or pavement of any kind, will be a very likely subject for an attack of the disease; and particularly one who, from being idle or at rest and unseasoned, is brought to do work of the kind suddenly or without any preparation. After feats of trotting, galloping, hunting and racing, horses become liable to an attack of laminitis, even though every precautionary training have been practised; but in cases where no preparation has been made, as in the instance of horses young and recently broke, comparatively little exertion will be liable to bring it on. A five-year-old horse of my own, recently broke into harness, was seized with acute laminitis, on a hot summer's day, when the ground was dry and hard, after a drive of not more than five miles, and that at an exceedingly moderate pace. And Mr. Braby, whose experience among cart and dray-horses is acknowledgedly great and valuable, informs me that young horses of this description, when they first enter on their London work, are particularly obnoxious to the disease, owing, he believes, to their wearing heavy shoes, and working day after day in them upon stone pavement; the injurious tendency of which is not a little augmented by the great weight—as much as two tons on an average—the horses while at work have to sustain upon their backs. The bevelling of their shoes, as is customary, inwards—in place of outwards—from imposing the superincumbent weight upon the border of the crust of the hoof, and upon the nails penetrating it, may likewise conduce to such an untoward result.

The act of standing for any great length of time upon any dry

* See the Author's "Hippopathology," vol. ii, p. 342.

hard surface, particularly where vigilance and more or less exertion on the part of the animal is continually required to maintain that standing, as is the case with horses on board of ship, has been known to produce the disease extensively. And that it was the continuance of the standing posture which caused the evil, appeared from the fact of such horses commonly escaping the disease as had been known to crouch or sit in the ship. In the expedition to Corunna, the late Mr. Castley had an excellent opportunity of observing this. That beautiful brigade of cavalry, consisting of the 7th, 10th and 15th Hussars, landed at Corunna about the 20th Nov. 1808. They had been on ship-board, owing to contrary winds, upwards of three weeks. A few days after disembarking, they marched up the country, by squadrons, in daily succession, occasioning thereby the last squadron to be later in its march by nine days than the first. Mr. Castley himself marched a day after the last squadron, and found at Betanzos, the first stage, twenty horses left behind with fever in their feet, the greater part of them belonging to the squadron that marched *first* from Corunna. And such continued to be the case, more or less, all along the line of march. Still, the first suffered much more than those that marched last; a circumstance inducing Mr. Castley to believe that the *immediate* exertion the horses were put to, after having stood upon their feet so long on board of ship, had much to do in causing the disease. The suspension girths with which ships are now or ought to be fitted up, together with a clay or other soft and cool standing, is the precaution recommended to be adopted to prevent this grievous consequence. Railroad travelling, when the journey or long continuance in the train happens to be great, is not unlikely to have the same evil tendency.

Drinking a large quantity of cold water while heated has, it is said, I believe on sufficient authority, been followed by laminitis. The ancients thought so, and modern practice seems to confirm this. Gorged stomach, likewise, has been known to occasion the disease. In the same volume of THE VETERINARIAN* from which I have been quoting, Mr. Castley informs us, he once heard Professor Dick, in his Lecture, say, "he had frequently seen laminitis arise from overloading or gorging the stomach with food. A horse, perhaps, gets loose, and eats an extraordinary quantity of any kind of grain: an attack of inflammation of the feet is likely to be the consequence. And such is the sympathy between the stomach, the alimentary canal, and the cutaneous surface, that, if we regard the hoofs as a continuation of the common integuments, this is not to be wondered at." The action of cold water upon a heated body may be similarly accounted for.

* VETERINARIAN for 1830, vol. iii, p. 198-9.

Metastasis of inflammation from the lungs to the feet, after inflammation in the former has happened to be severe and is becoming protracted, is a way in which laminitis on occasions takes its rise. The inflammation is then said "to fall from the lungs down into the feet;" though it oftener happens that the inflammation "falls" into the joints, producing "rheumatic lameness*." As soon as the metastasis has taken place the lungs become relieved through it; nor is the fever which has "fallen" into the feet of that violent and unmanageable character which that is which is an idiopatic affection.

It is said that the lungs, in their turn, may become affected through translation of the inflammation from the feet; to which I would add, that this seems more likely to happen when the lungs are already in a state of disease.

Metastasis from the bowels to the feet is a more rare circumstance. Super-purgation or *diarrhœa* has ended in fever in the feet, and seems more especially likely to do so whenever any check or diversion is given to the increased or inflammatory action going on in the intestines, and stomach, as well, perhaps. "Catching cold in physic," as it is called, is not at all unlikely to turn into an attack of laminitis. Indeed, without any distinct evidence that "cold" had been taken, I have known an attack of laminitis, on more occasions than one, seize horses just out of their physic, or at the time the physic was setting. Colic and enteritis have been known so to terminate. And this may account for certain kinds of food, such as barley and rye and wheat, being said to have a tendency to produce it.

Metastasis from the brain to the feet is more rare: it has, however, been known to take place†.

Metastasis from the eyes to the feet is a prevalent notion: though one, I believe, little confirmed by practice.

METASTATIC LAMINITIS is a less violent and dangerous disease than idiopathic acute laminitis. It commences in a system already depressed and worn by disease, and this seems to account for its comparative want of severity and danger. When once, however, the inflammatory action has betaken itself to the feet, the lungs or bowels or brain, as the case may be, become no longer the object of solicitude, in consequence of the evident decrease in activity the same action has undergone in them. In one point of view, therefore, metastasis is favourable. So far as the pulmonary or bowel disease is concerned, it may prove the means of saving the animal's life. On the other hand, it is possible, unless the case be skilfully managed, that the translated laminitis may, like the idio-

* Hippopathology, vol. iv, p. 35 *et sequent.*

† On the authority of my late father, Mr. John Percivall. *Vide* VETERINARIAN for 1829, vol. ii, p. 15.

pathic disease, end in disorganization of the feet, and consequent irremediable lameness. For the same reason that the metastatic disease is rather sub-acute than acute, we cannot—even supposing the case called for it—attack it with the same freedom and boldness we could the idiopathic form; in general, the powers of the constitution, at the time the former sets in, being in too reduced a condition to admit of this.

LAMINITIS MAY PROVE EPIDEMIC OR SPORADIC in its character. There are seasons—hot summers, perhaps, more particularly—in which the disease has been known to prevail, if not in all parts and places, in some, and to an alarming extent. I cannot say I have seen this occur in my own practice, but I know those who have experienced the sad visitation; and grievous the consequences of it have proved.

CALCULI IN THE LACTIFEROUS DUCTS OF THE MAMMA OF A COW.

By WILLIAM SMITH, *M.R.C.V.S., Norwich.*

ON the evening of the 17th of May 1850, I visited, at the request of the owner, a fine Norfolk cow, at Arming Hall, near this city. My patient is eight years old, in excellent condition, and full profit; she was bred on the farm, and is a remarkably good specimen of this breed.

I was sent for in consequence of the milker being unable to obtain any milk from the hind quarter of the left side of the udder, either on the previous evening or morning of this day, although it was obviously much distended with the secretion.

Symptoms.—I found the animal restless, and shifting her position frequently—the left hind quarter of the mamma tense and full—the papilla swollen, very sensitive, and the bowels constipated: there was much apparent uneasiness.

The external aperture of the duct was normal, nor did there appear to be any cause for the detention of the milk within this portion of the gland. I made several fruitless attempts to draw off the fluid. Not a drop followed. But, upon a close manipular examination of the teat, I discovered a hard unyielding body situate at its base, which was easily pressed down the duct towards the nipple, to within three-quarters of an inch of its orifice. On the apex of the teat it resisted all attempts to get it below this point, although as much pressure was applied to force it downwards, and thus extract it, as was deemed advisable.

Prognosis.—Fearing that a longer detention of the milk in this quarter would be followed by unfavourable symptoms, and that mammitis might be looked for, and probably, as a result, a troublesome case to deal with, I at once determined upon removing this body by cutting down upon it. I had, however, some misgivings with regard to the healing of a wound in this duct, having found contused wounds and injuries of the nipple in milch cows productive of much trouble to the practitioner and inconvenience to the milker: indeed, more than ordinary care must be observed by the latter, as the operation of milking in such cases gives pain to the animal and consequently extra trouble to the milker; she is often therefore, under these circumstances, not properly milked, and garget frequently ensues, to the annoyance of the veterinary attendant and to the disadvantage of the dairy.

Operation and Treatment.—Having hobbled the cow's hind legs, I pushed the body up the duct to a spot about midway between the base and apex of the teat. I grasped it firmly here between the finger and thumb of the left hand. I then cut down upon it, making a vertical incision on the outside of the teat hardly large enough to admit of its passing; by this means the calculus was easily extracted.

A large and continuous stream of milk followed its removal, passing through the artificial opening in the duct, which continued to flow in a copious stream till the quarter was quite empty. I then brought the edges of the wound together, and placed round the teat bands of adhesive plaister.

The animal appears much relieved. I administered the following draught before leaving her:—

℞	Magnes. sulph.	℥xij
	Nit. potass.	℥j
	Aquæ tep.	Ojss.

18*th.*—The medicine is operating. The milker had no difficulty in obtaining milk this morning—it flowed from the natural orifice; none escapes from the artificial opening. The wound looks as if it will heal by the adhesive process.

I did not see my patient again until the 21st, when the wound had nearly healed. No suppuration has followed. Every circumstance is satisfactory. She milks as well as before the operation; and, upon inquiry some days after, all is reported to be quite right. I have not seen or heard of her since, but should have had information if any thing unfavourable had occurred.

The calculus is about the size of a small horse-bean, and not dissimilar in figure; it is of a straw or cream colour externally, and of a chalky white internally: its surface has a smooth and polished aspect, being firm and dense, possessing a decidedly *silicious*

character. This incrustation is of uniform thickness, about the eighth of an inch, and envelops the internal substance, which is much less firm, being very friable, striated, white, and of a chalky nature. From its appearance I should suppose it to be composed chiefly of carbonate of lime.

Remarks.—Upon my first visit to this cow, I was reminded by the proprietor that I attended her, a twelvemonth or so since, for a sore nipple and obstruction of milk: I recollected the circumstance, and, seeing the next day a person who had formerly been milker upon the farm, I made further inquiries concerning the animal, and was informed that at different periods she had experienced great difficulty in getting milk from this quarter of the mamma, her first attack being about four years since; and that she had on several occasions, when the milk would not flow, forced through the natural orifice in the teat small stones. The cow would then milk well enough, and continue to do so for months, or until others found their way into the duct, which she then forced down and extracted in a similar manner; they were, of course, much smaller than the one I had to deal with. I have now little doubt that the excoriation at the end of the teat just referred to was produced by the exit of one of these bodies.

Upon my assigning as a *probable* cause for their presence the want of care in milking dry, the owner informed me that he had great confidence in the former as well as the present milker; and that, from the time the cow first yielded milk to the present period, he did not believe there had been any negligence in this respect; and consequently the idea of such a circumstance being in any way connected with the formation of these morbid concretions must have little weight.

We must therefore, I imagine, come to the conclusion that their production depends more upon a *constitutional* than a *local* cause. Whether they are eliminated *direct* from the *blood* by any altered chemical agency, or depend upon the presence of the earthy salts, of which they are composed, existing in excess in the *secretion* itself, and deposited from the *milk*—or owe their existence to some structural or functional alteration in the gland—or whether they arise from defective digestion and assimilation, or from a combination of these causes,—are questions for the veterinary pathologist to direct his attention to. And when a more extended knowledge of animal chemistry than at present, I fear, exists among us shall be diffused, we may hope to have important results from the light which it cannot fail to throw on the investigation into the causes of the production of calculous concretions in the animal body.

Perhaps no division of our science has received less attention

than this; although morbid concretions are not rare, but, on the contrary, are frequently met with in the organism of the domesticated animal. We have published accounts of their being found in the stomach, intestines, bladder, ureters, kidneys, veins, biliary, thoracic, and salivary ducts; yet I am not aware of any record—prior to this—being in existence, shewing them to have been found in the mammary gland or its ducts.

If this be correct, I hope I shall be pardoned for the length of this contribution, and for the space it has necessarily occupied in the pages of your invaluable Journal, which has been for so many years the medium of disseminating information amongst the members of the veterinary profession.

INVERSION OF THE UTERUS.

By W. COOPER, *M.R.C.V.S., Berkhampstead.*

A GREAT deal has been written on inversion of the uterus, and much information has thereby been imparted; so much indeed, that, after the able manner the subject has been treated, I feel a degree of diffidence in offering any further remarks. However, if the following hint prove hereafter of any service to the members of the profession, I shall feel gratified at having done so. I will, therefore, without further preface, beg to draw their attention to a simple yet very effective instrument, with which I have been able to surmount many of the difficulties attending the reduction of these truly formidable kind of herniæ. The common, and I believe hitherto only method of proceeding, has been to introduce the arm, in order to force in the inverted viscus, an object avowedly most difficult, and frequently impossible to be accomplished, as the numerous recorded cases testify. Now, as a substitute for the arm, I have employed a rod of iron (the same as that upon which my different obstetric instruments are screwed) to which is secured a pear-shaped wooden bulb, as seen in the following sketch.

Extreme length, 2 feet 8 inches: circumference of bulb around largest part, 11½ inches.

Armed with this simple contrivance, I proceed, after the necessary preliminaries, to re-invert the viscus by applying the bulb, as I was wont to put my closed hand, to the fundus of the womb. This I gradually raise and cautiously introduce within the vagina,

and with a gradual and due amount of pressure I find that, with an assistant manipulating at the sides, the viscus gradually recedes within the body; not with the ease which some who never operated may suppose, but with far less force and trouble than when the passage is filled up with the operator's arm, the space being too limited even with so diminutive a substance in it as the small rod of iron I have described. All who have attended such cases will, I think, see that this instrument, in the hands of those qualified to discriminate between its use and abuse, must oftentimes succeed when the arm would fail; and let those who feel disposed to try it blame me if they do not, in most cases, find it a valuable assistant.

I have four different-sized bulbs. I find the largest the best, providing it can be got into the passage. The one already described is the size generally required for the mare and the cow. I may further state, that I have two rods, one several inches longer than that in the sketch, it being requisite to use two when the inversion has gone to an extent to include each uterine cornu in the general descent. After replacing the uterus, and allowing a little time for it to adjust itself, I gently withdraw the instrument; but not until I have put in the necessary sutures, in order for tightening. Those I find to answer best are made of strong tape, and inserted in the thick skin, about the tuberosity of the ischium, instead of wires through the labia pudenda. Since adopting this situation for the sutures I have had no difficulty in keeping the viscus within the body.

Trusting this account will be understood by all interested in these matters,

I am, dear Sir,
Your's respectfully.

August 14, 1850.

CASES OF FRACTURES, TENOTOMY, AND PUERPERAL FEVER.

By P. Leach, *M.R.C.V.S., Southmotton.*

Case I.

Fracture of both Ossa Suffraginis of the Fore Legs of a Horse.

On Tuesday, July 23d, about eleven o'clock P.M., my immediate attendance was required to see a horse belonging to a posting establishment of this town, which had suddenly dropped on his return from Tiverton, and which was now lying about seven miles

from this place. The only history of the case which I could gain from the driver was, that whilst trotting at a pace of about six or eight miles an hour, over a perfectly smooth and level road, the horse suddenly stumbled and stopped, but did not fall. On the driver's alighting from the box of the chaise, and examining into the cause of the stoppage, he observed the horse to be standing upon his fetlocks with his feet bottom upwards. The harness was immediately taken off; the animal staggered a few steps, and fell upon his side, in which position I found him on my arrival, apparently in extreme pain. From what I had heard from the driver, I anticipated a rupture of the flexor tendons at least; and probably the suspensory ligament likewise; but on a minute examination of the leg I could discover nothing of the kind. Judge, however, my surprise at finding the os suffraginis completely fractured in many parts, together with an opening into the pastern joint (through which one or more of the pieces of bone must have protruded). I continued my examination to the other leg, and my surprise became astonishment on finding that the os suffraginis of this leg also had become fractured.

My diagnosis of the case was, of course, most unfavourable. I advised that the horse be shot, which was immediately done.

On a post-mortem examination of the part, I discovered the bone of the near leg to have been (as I expected) fractured into many parts—as many as eight pieces—whilst the bone of the off leg was fractured into ten pieces. To attempt a minute description of the fracture would be quite out of the question. Suffice it to say, each bone had the appearance of having been placed on end upon a smith's anvil, whilst the other end was struck very violently with a large sledge hammer, and thus the bone literally smashed into atoms.

The surrounding parts were very much contused, though the tendons and joints were, with one slight exception, sound. I should have added, that the horse was about twelve or fourteen years old; and that the bones were quite healthy.

Case II.—*Fracture of the Os Femoris in a Bull.*

The subject of this case was a remarkably fine two-year old bull, of the *Quartly* breed, the property of a farmer of this parish, and intended for exhibition at the late Exeter meeting of the Royal Agricultural Society. The owner not being, as I suppose, accustomed to driving cattle about the country in hot weather, sent for a smith (who is also a cattle doctor, when he can get a fool to employ him) to shoe this bull. It was cast, shod, and let up again; but, behold! one of his hind legs had become useless to him. There

was a swelling about the fetlock, and a day or two after I was applied to for some liniment to apply to the part. A few days after this, however, I was called in to see the animal. After examining him I told the owner that I considered the ligamentous cord (*ligamentum teres vel rotundum*) connecting the thigh bone with the body was torn through; that the bone had been dislocated, but again had resumed its natural position: under which circumstances I regarded the bull as valueless *alive*, and therefore advised that it be slaughtered. This, however, was strongly objected to,—all risks were to be run. Accordingly I ordered laxative medicine (the fever being considerable, with constipation of the bowels), and a stimulating liniment to be applied over the part opposite to the injury. This treatment was continued about a fortnight, when, seeing my patient did not improve, and since I saw no reason to change my opinion, I requested that another veterinary surgeon be consulted with myself on the subject. The owner preferred calling in a farrier of this place, and wished me to meet him; but to this, of course, I objected; and consequently left the case in my opponent's hands. I heard nothing particular respecting the case until last Friday, when I was informed by the butcher who slaughtered the animal that, instead of the *ligamentum teres* being injured, a portion of the head of the *os femoris*—I believe only a portion of the cartilaginous covering—had given way; but as to any other morbid appearances I am quite uninformed.

Query.—Had this animal been subjected to a long course of treatment, is it probable that a recovery would have taken place, so as to have qualified him for the particular services for which he was required*?

I may, perhaps, be allowed to state, that the farrier who was called in ridiculed the idea of the bone being out of joint; but said that the *cords* were strained, and to remedy this he stabbed the skin in about fifty places with a knife, and then rubbed in a blister. What further treatment he adopted I know not; but I believe what I have said to be correct.

Case III.—*Tenotomy in a Horse.*

In January last I was consulted by a gentleman of this place respecting a very valuable six-year-old horse, which had been getting more and more lame in the near fore leg for the previous six or eight months; and so lame had he become that he seldom placed his foot flatly upon the ground, but walked upon the front part of his hoof, and his fetlock joint. On examining the leg

* Anchylosis would, probably, have been the result — Ed. Vet.

I discovered a considerable thickening of the flexor tendons in their whole extent, between the knee and fetlock joints. The only history of the case I could obtain was, that six or eight months before the horse became slightly lame, which lameness had gradually increased up to the period when I was called in. Judging from the length of time the lameness had existed, the absence of the usual symptoms of inflammation in the part, and the *apparent contraction* and rigidity of the tendons, I at once advised the division of them, as the only chance of cure, and intimated that this must be undertaken as an experiment. The owner hesitated, and deferred his decision. About a week after he called upon me, saying that he had been advised firing and blistering as the best means of cure, which operations I was requested to perform. This was done, and I believe about six weeks' run given the animal, during which time the lameness very rapidly increased. I was now told that the horse would be given up to any system of treatment I chose to adopt. I accordingly prepared him by bran-mashes and physic, and proceeded to operate, by having him cast in the usual way, extending the leg, making a longitudinal incision at once through the skin, &c. down upon the tendons at the posterior part of the leg, and dividing them in an oblique direction; which done, I at once bandaged the part, and had a strong shoe (with a long heel and strong bar of iron passing up the back part of the leg to above the knee) fixed on. I then bound the leg back to the iron, and allowed my patient to get upon his feet, and walk into his stable: which he did pretty well. I had now to contend for some time with considerable inflammation of the part, and at times with severe sympathetic fever; and, what was much worse, a very restless, I might almost say furious, patient. The operation was performed about the middle or latter part of February last: the animal has not since been put to any kind of work; but is now able to trot and gallop and jump as well as ever he could in his life; nor does he, as I am told, evince the least lameness even when trotting at full speed.

Now, Mr. Editor, there is one thing connected with this case which may be worthy of mention. The leg appeared previous to the operation as if the flexor tendons were *contracted;* but I wanted to know if a *contraction in the length of a tendon* were possible. I have always thought it, and do still consider it, quite impossible, although we sometimes read and hear of such a thing taking place. I looked upon the present case as one of adhesion between the tendo perforans and perforatus, and gave my opinion accordingly; and it was upon this ground that I considered division of the tendons the only chance of cure.

I have carefully perused every written case which has come under my notice in the pages of THE VETERINARIAN, and not even in your own observations on disease of those tendons have I seen any such thing as *adhesion* mentioned. If such a thing be rare, surely I fancy cases of it must be of frequent occurrence, if they were recorded. Perhaps you may have some observations to offer on the subject*.

CASE IV.—*Puerperal (or Milk) Fever in a Cow, nine Weeks after Parturition.*

On Sunday, August 4th last, I was requested immediately to see a cow lying in a field, about half a mile from this town, about which I received the following history:—

Up to the morning, nothing unusual had been observed, but then the cow did not give her milk so freely as before. Nothing else unusual was noticed. The cow chewed her cud whilst being milked, and afterwards went, and fed as usual. In the evening, about six o'clock, however, when the man came to milk her again, she was lying down, and appearing rather restless. He endeavoured to make her rise upon her legs; but, notwithstanding she made two or three efforts, she was unable to get up. The servant informed his master, and I was immediately sent for. On my arrival at the field, I found the cow lying down; her tongue protruding from her mouth, and a quantity of frothy saliva dropping therefrom; her eye wild; head frequently tossed to and fro; extremities cold; breathing quick and laborious; and pulse much accelerated. I proceeded to abstract blood, which I allowed to flow until an evident effect was produced upon the system. By this time a messenger had arrived with a draught composed of spt. æth. nit. ℥ij, liq. ammon. acetat. ℥vj, which I immediately administered. In about half an hour the cow appeared much relieved, but was quite unable to rise. I had not before made the trial (and fortunately had given no opinion on the case); but I now discovered that the extremities, behind the dorsal vetebræ, were insensible to the prick of a pin or penknife, even though inserted an inch deep. I now told the owner that I feared the result, and, of course, what I thought was the nature of the case. A cart was sent for, and the cow taken home. My subsequent treatment consisted in the administration of cathartic and diaphoretic agents, with powerful counter-irritants along the whole course of the spine. All efforts, however, were useless. The paralysis rapidly extended

* So far from adhesion being "rare," it is the most common consequence of inflammation in these parts, and becomes in very many cases the *cause* of the alleged "contraction."—ED. VET.

to the fore extremities; and even the head, eyes, and tongue, became quite insensible to feeling. The animal died about ten o'clock the following morning.

I shall venture no opinion on this case more than that I have seen many cows labouring under the same disease; and the symptoms in every particular enable me to say that it is what we usually term "puerperal fever." The only thing strange is, the length of time after parturition at which the animal was attacked. I may also add, that I have never yet known but *one* cow which survived the attack so long as the present, *and that one recovered.* They have, in every other instance, died within six or eight hours after the first appearance of illness.

INFLUENZA.

By H. HUTCHINSON, *M.R.C.V.S.*

July 6th, 1850.—I WAS requested, at eight o'clock this morning, to visit a half-bred chestnut mare, six years old, fifteen hands and a quarter high, the property of a dealer in this town. A week previous she was ridden ten miles, it raining rapidly the whole of the distance. Since then she has had a slight cough; fed moderately, and looked thinner than usual. This morning the owner took a horse out of the stable at half-past six o'clock. On his return in an hour afterwards he found the stable-door open, and this mare shaking violently. When I saw her, the shaking had gone off; the skin and extremities felt cold; head down; eyes dull; pulse quick, but feeble; mouth hot and moist; throat slightly swollen, and sore upon pressure, being the usual symptoms of the prevailing epidemic. The horse the owner rode out this morning has been unwell with a cough, &c., but had recovered without being under medicinal treatment. I gave her a mild tonic ball of sulph. ferri, zingib., nit. potass., and resin, and had her throat rubbed with the ung. diniod. hydr., with warm clothing to her body and bandages to her legs, after being well hand-rubbed. Ordered her to be fed with mashes, without hay.

Eight, P.M.—Appears better, more cheerful, and has eaten a mash. Dungs in hard balls, with little of it. Give the tonic ball, with two drachms of aloes.

7th, Eight, A.M.—She has not eaten any thing during the night; does not lie down; appears dull; pulse quicker, yet its beat does not, to me, denote bleeding. Give the ball without the aloes, re-blister throat, and keep her as quiet as possible.

Eight, P.M.—Not so well; looks occasionally at her sides; props with her fore legs; is disinclined to urinate; respiration increased; bowels do not act properly: there is a decided derangement of all the secretions; drank a little hay tea; has not eaten any thing. Fore shoes to be taken off, and feet put into warm water; afterwards to be again bandaged. Give as follows:—Calomel ℈ij, hydr. potass. ℈j, nit. potass. ʒj, antim. tart. ʒij, zingib. & resin āāʒj, spt. æther. nit. ℥ss, acaciæ q. s., ut ft. pil.

8*th*, *Eight*, A.M.—Worse in every respect. Bowels obstinate; pulse quick, but weak; flank and nostrils heave more, particularly if the least excited; looks oftener at her sides; back and abdominal muscles drawn tense; moves stiff from her head to her tail, with that anxious look as if tetanus might appear; legs become cold. Rub in a stimulating liniment extensively over the loins, and then apply a fresh sheep-skin. Repeat the ball every eight hours.

Eight, P.M.—About the same; has drunk some hay tea; would eat dry hay, but is not allowed to have it.

9*th*, *Eight*, A.M.—A slight improvement; more cheerful; pulse firmer, better to count. The sheep-skin is beginning to act. Altogether she seems more comfortable, and in less pain.

Eight, P.M.—During the day she has eaten four new potatoes, with a little mash; skin feels more supple: medicine continued.

10*th*.—Decidedly improved since yesterday; recognises the groom as if for food. Drinks freely, and picks a little scalded hay. She is disposed to perspire. Remove the sheep-skin, cleanse the loins, and apply a double blanket. Continue the medicine thrice a day, as before.

11*th*.—Great improvement; has been down for the first time during her illness; moved to the door; very weak; her legs tremble under her; great prostration of strength; perspires very much. Give the medicine twice a-day.

12*th to* 15*th*.—Mending, but still sweats very much, lying down frequently. I gave of sulph. ferri ʒj, iodid. potass. ʒj, nit. potass. ʒij, zingib. et resin āā ʒj, made into aball with spt. æther. nit., and a little slow walking exercise.

20*th*.—Discharged, well, rapidly recovering flesh.

To the Editor of "The Veterinarian."

Veterinary Infirmary, W. Ruford, August 12th, 1850.

Sir,—I have been highly gratified at perusing the contribution of Mr. Gabriel, in your last month's VETERINARIAN; also with the Editorial remarks. I do think it of vital importance to discriminate when to draw blood and when to abstain from so doing.

By way of giving my humble opinion as a country practitioner, I thought I could not do better than send you the above case, one that occurred in my practice during the month of July last. It commenced as a common case of influenza, as which I treated it. On the third day the mare was decidedly suffering from pleurisy, conjointly with influenza: then came the question, *to bleed or not to bleed.* I stuck to my usual mode of attack, viz., calomel, c. iodid. potass.; and the result has strengthened my conviction that *the non-bleeding practice* (to use your own words) will succeed the best. This is an opinion I have held for years. It is, I can assure you, gratifying to see similar ideas upheld by such high authority as the talented Editor of our valuable Journal, THE VETERINARIAN. Many are the cases wherein animals have sunk, in my opinion, *from nothing but using the lancet too freely,* particularly those of young fat horses.

An under farm servant took from his master's barn, last Friday, a quantity of wheat, and gave it to the working horses. Two died on the following day, and a third is now suffering from laminitis.

I remain, Sir,

Faithfully your's,

H. HUTCHINSON.

ON THE REPORT TO THE COUNCIL CONCERNING THE EDINBURGH VETERINARY BOARD OF EXAMINATION.

Edinburgh, August 14th, 1850.

Mr. Editor, Sir,—MY object in addressing to you at this present time a few brief remarks, is in consequence of the Report in last month's VETERINARIAN of the Proceedings of the Council of the Royal College of Veterinary Surgeons. In regard to the Deputation sent to the Edinburgh Board of Examiners, I, as a member of that Board, feel an interest in the motion come to on the 17th of July. At the Quarterly Meeting held on 25th June, Mr. Tyndal in the Chair, the report of the Deputation to Edinburgh was read by the Secretary. It goes on to state that the Board acting for Scotland is at present short by three members, &c. Now the Council must have been aware long ago of a deficiency: if not, Mr. Tyndal could have informed the meeting that Drs. Knox and Mercer had not attended some previous meetings of the Board, the latter having given in his resignation a considerable time since.

Seeing this to be the case, these vacancies ought to have been filled up long ere this time; thus shewing that a dereliction of duty has occurred in some quarter or another. The *onus probandi* I leave in other hands. It is not this, however, that I complain of; it is the insinuation thrown out on the Board. The language of the Report is too obvious to be mistaken, viz. "*That the Examination did not appear to be conducted with that degree of dignity and deliberation essential to the advancement of veterinary science.*" What is meant by this word "dignity?" Or what does it refer to? Is it the browbeating or puzzling a student with "*clap-trap questions?*" If so, then I can assure you it certainly was wanting with our Board. In regard to the other, viz. "essential deliberation," why, each candidate had his allotted time and questions, at each section of the Board; the schedules were properly filled up; nothing remained then to be done but compare notes and give our awards. Again, "*and that gentlemen might be selected whose personal character and position might add weight to the decisions of the Board.*" Now, Sir, I think this is too much assumption. If you look over the list of Examiners acting for Scotland, you will find that their "*personal character,*" "*abilities;*" and "*position*" in society, will stand the test of a strict investigation. And what is more, they have always been stern and staunch friends to the advancement of the Royal College of Veterinary Surgeons. Perhaps an "*official dinner*" might have added to our "*dignity and deliberations.*" However, there is one point I would rejoice at, could I even bring myself to believe it, the following will shew why: "That the Professor *has come at last,* and expressed the best feelings towards the Royal College of Veterinary Surgeons, and trusted that any rivalry between it and himself would be only to advance the profession." Whether this be a temporary or permanent statement, I am unable at present to divine. It does not look so clear to me as yet, and is not like giving up the Charter, which was tried to be got in opposition to the one already obtained by the Royal College of Veterinary Surgeons (which all along has worked so well in the profession). *So much for his good feelings.* Look at the sequel. He stated that, *having prevailed* on the Highland and Agricultural Society to grant him a separate Board of Examiners, he could not at present secede from it. His petition for a separate Board looks very promising *for his friendly feelings.* Why did he appoint a Board of his own? It would have looked better for his friendship had he been content with the one appointed by the Council. I come now to the last part of the *Report.*

"*Your Secretary,* however, trusts the Professor will, by and by, see the desirability of doing so; and would venture to suggest to

the Council, should a re-organization of the section of the Board acting for Scotland be decided on, that Professor Dick's opinion be taken, from his intimate knowledge of all parties in the vicinity as to the eligibility and qualification of such gentlemen as may hereafter be selected *for so onerous a duty*." I could, Sir, say more than I at present intend upon this part of the Report. It is the most dangerous, because the most deceptive of the whole; and I am afraid the Secretary *trusts too much* when he "ventures" the above suggestion to the Council, in the face of the Professor's own statement, that he has for himself to get a Board from another party. What does the Council do when they apply to him? They only say, "be so kind as to name your own men;" or, in other words, ask the Highland and Agricultural Society to appoint us a Board of Examiners. Lo! *How "dignified," how "deliberately"* the Council put themselves under the feet of their acknowledged opponents! Will the Professor not chuckle over it, at the effects produced by "an official invitation to his examination dinner?"

I trust I have shewn how this important case stands. I have done it in as condensed a manner as time will permit. At present, my suggestion to the Council is, to weigh the matter carefully themselves before committing any rash step; for there is no doubt but that the eyes of the veterinary profession in Scotland will watch the proceedings.

In conclusion, if I had said any thing harsh, still it is the truth. My only wish is the prosperity of the profession and the College. Your insertion of these few lines in your Journal will much oblige

Your's, &c.

Mr. Percivall. THOMAS MATHER.

REMOUNT OF CAVALRY IN INDIA.

By J. T. HODGSON, *V.S.*

"Fleas are not lobsters!
——— their souls." *Peter Pindar.*

THE princes of the Mogul empire purchased from Kabul horse-merchants, at very high prices, the highest caste horses of size and substance, which were used as stallions for their own and subjects' mares.

In most other countries horses are the source of wealth and strength, being used in agriculture, commerce, travelling, field sports, &c. In India horses are only used for military purposes,

consequently are an expense and cause of weakness: the worst kind of revolt being the centaur form. None but worn out horses about the size of ponies are in use by or come within the means of the natives in general. A few opulent men ride, and a Patan or Seik may occasionally be seen driving a pair of horses.

In Bicanere they plough with a camel, and one would suppose that in other parts mares would be used; but it is not so: the Hindoos do not slaughter cattle, therefore oxen are innumerable,—are used in agriculture, as carriers of commerce, and in travelling, and in some parts camels also.

Previous to the opening of the trade to India, stallions and a few mares were frequently sent out in the Honourable Company's ships, subsequently less frequently in troop ships. Stallions are cheaper in England than any where else, and, with cost of transit, do not then exceed the cost of stallions procured elsewhere, excepting those, mostly unfit, that are purchased by the Stallion Committee in Calcutta.

That the breed of horses has not been *sufficiently kept up* in the only way this could best have been done, I shall prove from the facts I shall quote.

Lieut. Pigott, of the cavalry, in his Treatise on the Horses of India, wrote, "Every horse above the size of an ordinary tattoo (pony), being most probably a degenerate foreigner, and the tattoo* only peculiar to the country." The other horses he classed as "Tartar, Persian, and Arabian, from which the others have sprung, having names from the provinces where they are bred. Tartar horses are called Toorkees, Arabian horses Tazees; Moojenis is bred from Toorkaman and Tazee, as the Persian horses, from which sprung the Jungle Tazee of the Punjâb. The Tazees of the Dekan sprung from Arabians." Toorkaman and Persian horses are of large size and substance, fifteen hands and a half high; Arabians, on the contrary, are of small size and substance, frequently only thirteen hands one inch and a half high. When horses passing for Arabians are of large size and substance, the purity of their blood is doubtful, though such horses are known to be of equally high caste, i. e. Toorkaman; and, like the English horse, their *size* and *substance* arises from the same attention to the *breed*, difference of the *climate*, and *feeding*.

The descendants of these different horses invariably follow in size and substance that of their *progenitors;* every exertion, except weighing, like the French, has been made by zealous stud officers to increase their size by high feeding, not only at the home studs from birth, but in yearlings purchased from native breeders, whether bred from their own, or mares originally the

* Description of, *vide* Buffon's Natural History.

property of the government; for instance, here is Mr. De L'Etang's description of the Ganjam mare:—

"Almost all of the original mares of the Ganjam stud were Arab, Persian, Cutch, Cattywar, and Dukanee, procured from Bombay by an officer sent there for that purpose; and the stallions, except a very few English ones, were all Arabs or Persians. On the Ganjam stud being done away in 1811, the best of the above mares and their produce, about three hundred and sixty, were transferred to Poosah: almost all the mares were distributed among the district breeders. They were, in general, rather *small*, but strong and compact, and shewed much blood. Most of them had very fine forehands and legs, but *short quarters and drooping croups, with cat hams.* A Ganjam mare is a very good conclusion to a pedigree, being the best description introduced into the stud, with the exception of the home stud or Poosah mares, which were not given out to native breeders, being superior to the district mares. Most of the former were imported English and Arab mares or their produce, some of them very fine mares indeed."

"At the institution of the stud, Major Fraser purchased about three hundred mares for it, in the western provinces, of the following breeds:—Punjâbbee, Jungle, Tazee, Northern, Mahratta, Duknee, Magennis, and Toorkamanee. In 1811 a troop of the 6th Cavalry were mounted on mares, when the experiment of working them with entire horses was abandoned: the best were distributed among the breeders. They were, in general, common country mares, of good size and bone, but coarse."

"The cross between large stallions and Tangun mares was tried, and failed to produce strong compact little horses for the artillery." Pigott described the Tangun like the "Gowt, or Hill Toorkee, bred in the mountains of Thibet, is small and hardy, in height that of a pony, but with strength, bone, and bulk, far exceeding that proportion, insomuch as to fill a harness calculated in width for a horse fifteen hands high." In the districts, the stallions were placed in circles of twenty-five mares. When one died, another was substituted. Mr. M'Gillavray, in his paper of June last, On the Hereditary Tendency, &c., stated the case of Dominic Sampson; but, when he sees the description of Gangun mares, he will understand the horse fell into very bad company, and that had he travelled as our English stallions do, the defects in sire and dam might not thus have re-appeared, when put to mares free from cat hams, or of the opposite make. The stud officers were in this not to blame; the *system* was ordered by the Board of Superintendence in Calcutta, who, not being physiologists, were not aware, though stud officers are, that such cases as those stated in an excellent paper by Mr. M'Gillavray, in September 1849, On the Reproductive

System of Animals, or they never would so long have continued their system, in which we find nothing but indiscriminate crossing. We find M. De L'Etang, after the stud had been established thirty years, state, "It is much to be regretted that so little attention was given to the preservation of pedigrees in the Poosah stud. An acknowledgment that the better mares were small and defective, and the inutility of breeding from small stock in general, having the most blood."—*Appendix to List of Stallions.*

The climate of India is not unfavourable to breeding horses and other animals, provided the breeds are kept pure; for, in those provinces where this has been the case, the horses, as well as neat cattle, sheep, and camels, retain their characteristics of size and substance, depending on the original breed, the climate, and feeding: in the different parts of a country of such extent more should not be expected;

> "For there the brightest sunsets glow,
> And there the warmest breezes blow.
> This lovely land, this Indian clime,
> Was beauteous from the birth of Time." *Peter Penne.*

The pilgrim in the east wrote, however, only twenty lines from this,

> "Beauteous they are, but lovelier still
> The land that I may never see
> Again; but still my heart shall be,
> England, my native isle, with thee!"

In those parts where horses are bred, the mean temperature of the earth is 74° Fahr., the hot winds 120° and even 140°; which statement, I am sure, is quite sufficient to convince the physiologist that the progeny of small Arab horses will not improve in size and substance, as they have done in the temperate climate of England, where the temperature is similar to that of the Himalaya mountains, 8000 feet above the level of the sea. An intelligent foreign writer, Quetehit, wrote on man, "There is a type proper to a country and to the circumstances in which it is placed. Deviations from this type would be the product of causes purely accidental, which act either plus or minus with the same intensity, shewing its growth, weight, height, pulse." All this is peculiarly striking to any one who has seen the inhabitants of the different parts of India; and it applies, as I have stated, to horses, cattle, sheep, camels, &c.

Mr. M. Martin, in his History of the British Colonies, goes farther than this. "In considering the climate, this much is certain, that, in the low land of tropical countries, no attentive observer of Nature will fail to witness the power exercised by the moon on the seasons, and over animal and vegetable nature. I have seen

in Africa many young perish in a few hours at the mother's side, when exposed to the rays of the full moon." I am too well aware of the effects of the seasons on animal life in the lower and higher lands of India to sing with Mr. Richard*,

"O! give me but my Arab steed!"

I know I should be stopped by some heavy dragoon, with "I care not for your puny steed:"

"Arabs are not horses,
Drop their blood."

"I wish to bear down, as I have done, all before me. The knowledge that those to whom we are opposed are better mounted should not happen." There is no answer to this. I am obliged, notwithstanding my predilections in favour of Arabs, to say with Lord Byron,

"Bound where thou wilt, my Barb."

You cannot be used as a stallion, only under an improved form, *fit to beget horses for European cavalry;* the standard for which is fixed at fourteen hands two inches, and for regular native cavalry half an inch less.

I have thus endeavoured to give as brief a sketch as possible of the remount, that may be interesting to the cavalry officer and veterinary surgeon proceeding to India. It is so important, that I have been obliged to notice all its bearings. I have treated the subject as, I think, it should be considered: it will be seen that Mr. Moorcroft, Lieut. Pigott, myself, and those practically acquainted with breeding only, do so; physiologically, the majority thought, however, they could by feeding alone succeed. They have not done so. Nevertheless I may, in a future paper, offer a few observations on feeding.

Home Extracts.

PROFESSOR SIMONDS'S LECTURE.

On the occasion of the Agricultural Show at Exeter Professor Simonds delivered his lecture "On the Structure and Diseases of the Liver in Domesticated Animals," at the Athenæum. The lecture-room was full, but not inconveniently crowded. The President of the Association, the Marquis of Downshire, presided.

* Vide Horse-breeding in France.

The Chairman briefly introduced the lecturer.

Professor SIMONDS, on rising, was received with cheers. We have only room for a very condensed report of his lecture.

He commenced by observing, that, acting in accordance with his established custom, he should not presume to intrude on their time by the introduction of any remarks not having immediate reference to the subject of his lecture: he should therefore proceed at once to consider the structure and functions of the liver, with as much of its pathology as was practicable in addressing agriculturists. The disease on which he should chiefly dwell was that usually known by the name of the rot in sheep.

The liver was of one the most important organs in the animal economy. The food of animals, after having undergone certain changes in the stomach, becomes what anatomists designate a chymous mass. In this condition it passes from the stomach into the intestinal canal, where it is mingled with two particular fluids; one the pancreatic juice, which is secreted by an organ called the pancreas; the other prepared by the liver, and named the bile. It was the combined action of those two fluids on the chymous mass that produced the important changes which it underwent within the intestinal canal. Anatomists had given a vast deal of attention to the functions of the liver; but before speaking of these, and more particularly of the secretion of bile, he would take a rapid sketch of the anatomy of the organ. The liver was the largest organ belonging to that class designated glands; but it differed from all other glands, inasmuch as the fluid which it elaborated was produced, not from arterial but from venous blood—the most impure in the body—and thus, in this case, a secretion essential to the maintenance of health was produced from an impure material. The organ differed in size in various animals. [The Professor referred to diagrams, which shewed that the liver was much larger in the dog than in the herbivorous class.] Most of them were aware that large cavities existed in animals; that the one which contained the heart and lungs was named the chest, and that the abdomen was separated from it by a membranous partition usually called the diaphragm. It was in this latter cavity, the abdomen, that the liver was situated; but it also contained various other organs, and in order, therefore, more accurately to define the position of these, anatomists divided the abdomen by imaginary lines into different regions. [He referred to a diagram, shewing the divisions, by certain transverse and longitudinal lines.] Dividing it transversely, the upper or anterior portion of the abdomen was occupied by the right and the left hypochondriac; the central by the right and the left lumbar; and the lower or posterior by the right and the left iliac; whilst the longitudinal lines denoted the

position of the epigastric region, between the two hypochondriacs; the umbilical, between the lumbars; and the hypogastric between the iliacs. It was in the right hypochondriac region that the liver was principally situated, but not entirely, as in some animals, such as the horse, sheep, and ox a portion of it extended into the epigastric, and even into the left hypochondriac. The liver being a gland differing with regard to its development, was also divided into lobes, more or less numerous in different animals. In the ox and sheep we observe the middle, the right, and the left lobes; in the pig a larger number; and in the dog a larger still. But not only did the liver thus differ in size and form, it varied in other important particulars: in some animals they met with an appendage called the gall-bladder, which was found in the ox, the sheep, the dog, and the pig, but was wanting in the horse. Nor must they imagine that, seeing the gall-bladder was generally present in domesticated animals, it existed in all of the same class. It was found in some of the deer tribe, but not in others; and it was said by Professor Owen, that it formed the mark of distinction between the hollow and the solid horned ruminantia, existing in the hollow horned and not in the solid. That it was a receptacle for the secretion coming from the liver could not be denied, but, at the same time, it also secreted a fluid that mingled with the bile. These anatomical peculiarities would throw some light on the diseases of the gland, and would be useful in understanding the functions which the liver performed: as he had before observed, the gall-bladder was not found in the pachydermata, with the exception of the pig and his congeners: in the horse, and likewise in the elephant and rhinoceros, it was wanting. [The lecturer then described the structural anatomy of the liver, referring to various diagrams suspended against the walls: he pointed out the position of the vena portæ and the bloodvessels with which it was connected; the mesenteric veins coming from the intestines, the splenic from the spleen, the pancreatic from the pancreas, and the gastric from the stomach.] All these vessels were united to form the large portal vein which entered the liver. The blood carried by the veins of the intestinal canal was impregnated with the non-nitrogenized materials which the animals had taken in their food, and their absorption was taking place, not for the purpose of affording nutriment, but to support the heat of the body; while those not consumed for this purpose accumulated in various tissues in the form of fat. From the fact of the liver receiving this impure blood, it might also be gathered that it was not only what anatomists designated a secreting organ, but likewise an excreting one: it got rid of something out of the blood, which if continued in it would be prejudicial to health; consequently it was evident that the liver

was an organ of a peculiar character, secreting a fluid necessary for the maintenance of animal life, and excreting materials prejudicial to it. As a proof that the liver was an excreting organ, the lecturer referred to the function of the organ during fœtal life. [He then, at some length, and with much clearness, described the anatomy of the liver and the adjacent organs, for which we have not space.] In reference to the function of the liver, he observed that a new light had been thrown on this subject within the last few months, by experiments which were undertaken to ascertain the precise part which both the pancreas and the liver play in the animal economy; these experiments had been carried out in this country and also in France. A French physiologist (M. Bernard) had ascertained that one function of the liver was to produce sugar out of the animal organism: this was quite a new theory. Liebig and others had always held that animals had not the power of generating a single principle; but now we are told that the liver had the power of forming sugar. This would throw a new light on the disease usually called the rot in sheep. It was known that, at an early stage of the rot, the animal accumulated flesh somewhat faster: but this tendency to fatten only continued a certain length of time. The diseased action which led to the accumulation of fat ultimately produced its absorption; and this observation would lead him to the consideration of another fact, that, in some animals the liver was found converted into a fatty mass. The bile cells, those minute organisms which separate the bile from the blood, are often found to contain fat, and the liver itself is also at times found to contain a large quantity of sugar. Chemically, sugar and fat are nearly allied, the chief difference being that the one contains a small portion of oxygen. [Having made some further physiological remarks, he proceeded to the diseases of the liver.]

The liver, like every other organ, is liable to have its functions deranged, and also to changes of its structure. The structural changes were usually the product of inflammation, but not invariably so. It was no less important to know that functionary derangement not unfrequently gave rise to very serious disease. Most persons had had practical proof how soon the functions of the liver were deranged from mental excitement. Exposure to a high temperature was likewise sufficient to produce these and to lay the foundation for organic lesions of the liver; hence, in tropical climates, liver affections were the bane of the country. They also knew that oxen, sheep, and horses, became frequently affected with deranged biliary secretions; these, therefore, might arise from functional impairment or organic lesion. There was one disease known as jaundice, which was sometimes caused by simple functional derangement; at other times from change of structure,—and

often from obstructions taking place in the passage of the bile from the liver to the intestinal canal. They might thus have three or four different causes for attacks of jaundice; a fact which shews the absolute necessity, when cattle or sheep are affected, that the farmer should consult some competent authority to ascertain the origin of the malady. [The lecturer referred to a specimen of biliary calculus, to illustrate an obstruction in the biliary ducts.] As he had said, the secretion of the bile depended on the condition of the blood which went to the liver, and that again on the quantity and quality of the food on which the animal was fed. From the well known fact of the physical properties of the bile undergoing a variety of changes, they could easily understand that it sometimes had a tendency to thicken, and thus to lay the foundation for biliary calculi. These calculi not unfrequently formed in the gall-bladder or the biliary ducts; and it was very important, more especially in sheep, to ascertain the exact situation in which they were located. If the gall stones accumulate in the gall-bladder, they might do very little harm; but if, on the contrary, in the main or common duct of the sheep, they might be productive of a considerable amount of mischief, by preventing the flow not only of the bile in that animal, but likewise of pancreatic fluid into the intestinal canal. They would find the symptoms differed very much in jaundice affections: if the disease were caused by simple functional derangement, the attack was usually sudden, and occurred most frequently in the summer months. It seemed to proceed from an undue stimulus given to the liver, causing a greater secretion of bile than was necessary for the chylification of the food: this produced the mildest form of jaundice. In bilious diseases, among the other symptoms, a change was observed in the urine; it was of a browner colour, which was caused by the efforts of the kidneys to perform the functions of the liver by carrying off the colouring matter of the bile when that organ was prostrated by disease. In some cases of jaundice, diarrhœa was present, but in other cases there was constipation. It might be ascertained whether or not jaundice was occasioned by organic lesions: the increased pulsation, and the febrile state of the system, would shew at once that the attack was referrible to inflammation; whilst the absence of those symptoms, and the long continuance of the disease, indicated the existence of a biliary calculus. He wished to impress on them the importance to be attached to the slightest symptom of ill-health: for instance, in treating jaundice referrible to inflammation, it was necessary to remove the morbid action as quickly as possible, by giving aperient medicine, drawing blood from the system, and also by the application of counter-irritants to the side: but none of these means were required in simple functional derangement. If there

were gall stones, the mechanical obstruction they caused must be removed by stimulating the liver to increased action, so as to press them onwards into the intestinal canal: when the disease was thus occasioned, a good deal of pain, commonly known as colic, resulted.

These remarks, he said, would lay the foundation for a few observations on that affection ordinarily designated the rot in sheep, a disease not unknown in this part of the country, but not so prevalent as in some other places. No malady was probably so much feared by the agriculturists as this, and with reason, for it was most destructive to his hopes It was commonly believed to be incurable, and therefore it was all-important to inquire into the causes which gave rise to it. He need hardly tell them, as practical men, that the prevalence of the rot depended very much on the quality and kind of food consumed by the animal. Some pastures were notorious for rotting sheep; on other lands sheep, under all ordinary circumstances, were pastured with impunity: but, as a broad principle, it may be laid down that an excess of moisture is prejudicial to the health of the animal. Sheep, by nature, are not only erratic animals, wandering over a large space of ground, but are also inhabitants of arid districts. The skill of man has increased and improved the breed, and has naturalised the animal in moist and temperate climates. But, nevertheless, circumstances now and then take place which shew that its nature is not entirely changed: thus, a wet season occurs, the animals are exposed to the debilitating effects of moisture, and the rot spreads among them to a fearful extent. The malady is not confined to England or to Europe; it is found in Asia and Africa, and occurs also in Egypt on the receding of the waters of the Nile.

These facts are valuable, because they shew that the cause of the disease is not local—that it is not produced by climate or temperature; for it was found that animals in any temperature became affected, and on any soil in certain seasons. A great deal had been written on the rot in sheep, which it were to be wished had not been. Many talented individuals had devoted their time to its investigation, endeavouring to trace out a cause for it, as if it originated from one cause alone. But the facts he had alluded to would shew that it arose from more causes than one. He had mentioned the circumstance with regard to the land sometimes producing rot and sometimes not; but he would go a step further, and ask—was there any particular period of the year when animals were more subject to the attack? Undoubtedly there was! From this time to the commencement of the winter is the most likely period, and, if a large quantity of rain now fell, the heat and moisture combined would produce a most luxuriant herbage; but that herbage would be deficient in nutriment, and danger would be

run; the large quantity of watery matter in the food acting as a direct excitement to the abnormal functions of the digestive organs. Early disturbance of the liver led to an accumulation of fat, and, consequently, an animal being "touched with the rot" thrived much more than usual. This reminded the lecturer that the celebrated Bakewell was said to be in the habit of placing his sheep on land notorious for rotting them, in order to prevent other people from getting his stock, and likewise to bring them earlier to market for the butcher.

The CHAIRMAN.—He would keep them on water meadows.

Professor SIMONDS assented. He then observed that the subject was one of considerable importance. They would in a day or two visit the water meadows of Sir Thomas Acland and Mr. Turner, and these gentlemen he had no doubt knew as well as he (the lecturer) that sheep placed in water meadows, after irrigation at this period of the year, always had a tendency to rot. It was important to know when water should be thrown on pastures, the proper season being during the winter and spring months. Referring again to the diseases of the liver, he observed that the bile in rot, in consequence of the derangement of the liver being continued, lost its property of converting the chymous mass into nutritious matter, and the animal fell away in condition. Every part of the system was now supplied with impure blood, for they might as well expect pure water from a poisoned fountain as pure blood when the secretion of the bile was unhealthy. This state of the liver and the system was associated with the existence of parasites of a particular kind (*distoma hepaticum*). Some persons supposed that these parasites, which from their particular form were called flukes, were the cause of the rot. He regarded them as the effect; yet it was to be remembered that they multiplied so rapidly, that they became the cause of further diseased action. Sheep in the earlier stages of the affection, before their biliary ducts became filled with flukes, may be restored; but, when the parasites existed in abundance, there was no chance of the animals' recovery. Those persons who supposed flukes to be the cause of rot had, perhaps, some reason for that opinion. Flukes are oviparous; their ova mingle with the biliary secretion, and thus find their way out of the intestinal canal unto the land; as in the feculent matter of rotten sheep may be found millions of flukes. A Mr. King, of Bath, had unhesitatingly given it as his opinion that flukes were the cause of the rot; believing that, if sheep were pastured on land where their ova existed, they would be taken up with the food, enter into the ramifications of the biliary ducts, and thus contaminate the whole of the liver. There appeared some ground for this assertion, because very little indeed was known with refer-

ence to the duration of life in its latent form in the egg. How long the eggs of birds would remain without undergoing change, if not placed under circumstances favourable to the development of life in a more active form, was undecided. It was the same with the ova of these parasites; so long as they remained on the pasture they underwent no change: but place them in the body of the animal, and subject them to the influence of heat, &c., then those changes would commence which ended in the production of perfect flukes. Take another illustration of the long duration of latent life:—Wheat had been locked up for hundreds of years—nay, for thousands—in Egyptian mummies, without undergoing any change, and yet, when planted, had been found prolific. [The lecturer then referred to some statements made by the late Mr. Youatt some years since, in a work on the Anatomy and Diseases of Sheep, published by the Society for the Diffusion of Useful Knowledge, on the structure of the fluke, and controverted some of his statements.]

In conclusion, he made some observations on the mode of treatment. He was not there to say that rot was in all cases a curable affection; but at the same time he was fully aware that many animals that are now considered incurable, might be restored if sufficient attention was given to them. He mentioned one fact in illustration. About two years ago he purchased seven or eight sheep, all of them giving indisputable proof of rot in its advanced stage. He intended them for experiment and dissection; but as he did not require all of them, and during the winter season, in which only he could dissect, he kept some until the summer. They were supplied with food of nutritious quality, free from moisture; they were also protected from all storms and changes of weather, being placed in a shed; the result was, that without the application of any medicine, two of those rotten sheep quite recovered; and when he killed them, although he found that the liver had undergone some change, still the animals would have lived on for years. Rot, in its advanced stage, was a disease which might be considered analogous to dropsy—a serous fluid accumulates in various parts of the body, chiefly beneath the cellular tissue—consequently some called it the water rot, others the fluke rot; but these were merely indications of the same disease in different stages. If flukes were present, it was evident that, in order to strike at the root of the malady, they must get rid of these entozoa, and that could only be effected by bringing about a healthy condition of the system. Nothing that could be done by the application of medicine would act on them to effect their vitality. It was only by strengthening the animal powers that they were enabled to give sufficient tone to the system to throw off the flukes; for this pur-

pose many advocated salt. Salt was an excellent stimulative to the digestive organs, and might also be of service in restoring the biliary secretion, from the soda which it contained. So well is its stimulative action known, that some individuals always keep salt in the troughs containing the animals' food. That this was a preventive, they had good proof, seeing that it mattered not how moist the soil might be in salt mashes; no sheep were ever attacked by rot in them, whilst those sent there infected, very often came back free. Salt, therefore, must not be neglected; but then came the question, could they not do something more? he believed they could. They must throw tonics into the system, especially those which were obtained from the mineral kingdom. He should prefer the sulphate of iron—iron was found in animals,—it was one of the constituents of the blood, and, used in the form of sulphate, it gave a greater tone and energy to the frame than in any other form: its use, therefore, ought never to be neglected in the earlier stages of the disease. He had already alluded to the fact, that, when the liver did not perform its functions, a greater effort was made by the kidneys to depurate the blood. The kidneys should therefore be stimulated; but he must not be supposed to advise the exhibition of diuretics, which would produce debility, but of medicines which would give strength to the frame and act on the kidneys as well, for which purpose nitric ether was an agent which ought to be employed. The principles he wished to lay down were, to husband the animals' powers by placing them in a situation where they should not be exposed to the debilitating effects of cold storms—to supply them with nutritious food, and such as contained but a small quantity of water, and, as a stimulant to the digestive and assimilative processes, to mix with it salt—and likewise to administer sulphate of iron, and occasionally doses of nitric ether. He made no doubt, if these recommendations were carried out, that instead of being obliged to send their sheep to the knacker's yard, they would not unfrequently be able, at least in its early stages, to cure the disease, and dispose of them to the butcher. On concluding, the lecturer was warmly cheered.

Mr. Brandreth moved the thanks of the meeting to the lecturer, which was carried by acclamation, and conveyed to him in eulogistic terms by the noble Chairman.

Corrected from "The Western Times."

Pleuro-Pneumonia amongst Cattle.

By George Waters, *Jun.*, *M.R.C.V.S.*, *Corn Exchange Hill, Cambridge.*

PRIZE ESSAY.

Mode of Infection.

[Continued from page 416.]

Before stating my opinion on the "Mode of Infection," I shall take the liberty of bringing forward a few general considerations on the circumstances which appear to exercise an influence on the original production of a disorder, which, infectious though it may be, comes nevertheless within that class of diseases termed Epizootic.

The subject of epizootic diseases is one of an extensive range, and admits of a wide field for speculation; there are, however, some general as well as particular circumstances which we should not be justified in overlooking. The manner in which this, or diseases of a similar kind, are not only observed to prevail over extensive districts of the same country, but also in different countries themselves, would lead us to ascribe their origin, as well as their specific character, to peculiar atmospheric conditions; but as yet so little has been positively ascertained regarding those conditions, that, whilst we are obliged to take them into account in dealing with the general history of the disease, we are not able to draw any practical application from them. I may, however, mention that unusual and irregular weather—the prevalence of particular winds—varieties of season, as drought and moisture—may exercise some influence on the development of the disease: but what is of more practical importance, that local conditions, either as regards situation of pasturage and quality of herbage, impurities of stabling, stall-food, either defective in quantity or quality, may also materially contribute to its production.

And in addition to the abovementioned external causes, I must not fail to call attention to those conditions in which foreign cattle are placed before they arrive in this country—such as a voyage by sea, confinement on deck, &c.; or the manner in which they or home-bred cattle are driven from one place to another, under which circumstances they are made to undergo much fatigue, and are generally obliged to pick up food by the roadside, or in limited pastures, being at the same time exposed to all varieties of the weather. However, many of the inconveniences connected with

the forwarding of cattle from one place to another are now obviated by the facilities afforded by railways.

If we take a general survey of the causes just brought forward, we shall find that they almost collectively lead us to the conclusion that the manner in which cattle are met with, congregated together at fairs, markets, or passed from place to place, favours, if not the production, yet in a most remarkable manner the dissemination, of the disease.

It is true that we might, at first sight, ascribe the frequent occurrence of the disease in cattle so circumstanced to infection; but we must bear in mind that they have all been placed in the same conditions, and that there can be no more reason that one should escape the effects produced by such conditions than another. We must, however, give some restriction to the last expression, because it is probable that a particular animal, by virtue of its peculiar constitution, as well as its general health when brought amongst the stock, would be more liable to become affected by the conditions beforementioned than the others; and, moreover, we can conceive that an animal so disposed should take up the disease, and afterwards communicate it to others. But, quitting the subject which bears on the dissemination of the disease amongst drifted cattle, we shall next take into consideration the manner in which we have observed it to break out most frequently in private establishments; and a reference to our cases in general, but to *Cases* 14, 15, 18, 22, and 29, in particular, will, we think, satisfactorily shew that it is chiefly due to the introduction of drifted cattle to home-stock; and the fact of the latter, which were previously in good health, becoming affected after being brought into communication with the drifted or diseased cattle, establishes in our mind the proof that the disease is infectious. As regards the "mode of infection" itself, it is difficult to say whether immediate contact be necessary or not: but we can readily conceive the air itself to be a medium by which the disease may be communicated from one animal to another.

There is another point of view under which it would be well to consider this question—how far premises previously occupied by diseased animals, but from which they had been removed, may communicate the disorder to fresh comers? But this question can hardly be discussed apart, for it involves another consideration, that of the healthiness of the locality itself; and it may not unfrequently have happened that instances of disease successively occurring in different animals in the same locality may have been with less correctness ascribed to the influence of infection than to the unhealthiness of the former: the losses which Mr. Fletcher experienced might with as much justice be referred to the general

unhealthiness of the premises, as to the effects of infection. In some of the cases of disease which we have related, viz. 17, 20, 21, &c., the origin could not be traced to the effects of infection; and that circumstance adds to the importance we should attach to the conditions in which isolated animals are placed as regards their liability to disease.

To dwell longer on this head would expose us to repetition when we bring the next subject to be treated under consideration.

Precautions against Infection.

Without discussing the point, whether the disease was introduced into this country by foreign cattle, or whether any system of police could have prevented that introduction, we must now, as regards precautions, consider the disease as it is met with in this country. The facts I have brought forward tend to shew that the disorder is principally propagated by fairs and markets; and I should recommend the buyer, whenever he is in doubt about any stock he is anxious to purchase, to consult those who are familiar with the premonitory symptoms of the disease. But if he should be so unfortunate as to purchase animals affected with the malady, or exhibit any tendency thereto, he would do well to first lodge them in a well-ventilated and warm building, apart from other stock; and, contrary to the plan usually adopted, the air should be accessible from the upper part more especially. Particular attention should also be paid to the diet, which should be of a light and nutritious character, such as boiled linseed, boiled turnips, carrots, bran-mashes, &c.; but upon no consideration should hay, straw, or dry chaff, be given, which articles of food we have repeatedly observed to produce considerable irritation of the respiratory tract.

The importance of medical treatment in the first stage has been sufficiently pointed out to shew that as little delay as possible should be had in having recourse to it. Those individuals who are in the habit of attending upon such cattle should wear a loose external garment during the time they remain with them, and should not be allowed to approach other stock without first taking it off. Although we have no proofs that the disease is communicable by contagion, yet the facts that have fallen under our observation warrant me in recommending this change of garment.

As regards precautions to be taken with healthy cattle, I should recommend all those causes I have particularly pointed out as predisposing to be avoided, but especially confinement of numerous animals in ill-ventilated and narrow buildings, bad food, impure water, exposure to cold east winds, &c.

Buildings which have previously been occupied by diseased cattle should undergo as complete a purification as possible. They should be first washed with a strong ley of pearl-ash or soda; afterwards they may be tarred, and quick-lime scattered about the premises with water sprinkled upon it, if the place should be dry. But I feel I shall be guilty of a great omission if I did not impress upon the owners of cattle this additional precaution. They must not attach too much importance to disinfecting means; for cases which have fallen under my own observation, and Fletcher's more particularly, amply shew that the locality of the stabling itself, its imperfect drainage, the conditions of ventilation, &c., may, I will not simply say keep up, but even give rise to the disease; and if this opinion be correct, it is quite evident that precautionary disinfecting means will prove of little or no avail.

So much with regard to external circumstances as precautionary means; but the success which has attended the treatment we have adopted in healthy cattle themselves, that is, the application of a seton in the dewlap, induces us to recommend its use in all cases when well-grounded apprehensions are entertained as regards the liability of cattle to the disease.

Premonitory Symptoms.

It is rare that we are called in at the commencement of this disease; but when we do see animals in that stage, the following symptoms usually present themselves. The first and most important of these is a short husking cough, and to which I have so frequently alluded in former parts of this paper. This may continue for a variable period; sometimes it is observed to commence but a short time previous to the appearance of other symptoms of a less ambiguous nature, while in others it may hang upon the animal for some considerable time. Soon after this cough has set in a diminution of the natural secretions may be observed; and if a cow be the subject of the disorder, her milk becomes scanty, and sometimes slightly altered in colour: I have also found it to coagulate upon the application of heat. The breathing is natural while the animal remains tranquil, but upon exertion, such as when driven to a short distance, for instance, it becomes accelerated and laboured. Appetite not perceptibly impaired, although the animal looks somewhat lank; pulse regular, no appreciable alteration in the temperature of the animal: in some instances diarrhœa sets in spontaneously,; in others there is constipation: with the exception of the above mentioned symptoms, the animal appears tolerably healthy.

Although these symptoms may and do exist in most cases for

a sufficient length of time to warn us of the approach of the succeeding active stage of the disease, yet from their comparatively mild and doubtful character they elude suspicion; consequently, if observed, they are either neglected, or considered of too little importance to require medical treatment.

This, which I have been in the habit of designating the husking stage, is the most important in a practical point of view; at least, so far as regards the possibility of saving the life of the animal by treatment.

It is usual, after having described the symptoms of a disease through its different stages, to point out those which indicate a favourable result; but I have omitted doing so, because I felt that the danger an animal runs when affected with this disease would be better understood after the morbid conditions which characterise its different stages had been shewn; and I have only to refer to those morbid conditions which we have described, and of which I have given illustrations, to shew that the danger that the animal runs increases as the disease advances.

The course that I pursue when consulted about this disease is directed by two considerations: the one, that of saving the animal; the other, that of considering the interests of the proprietor. If I am called in during the first, or beginning of the second stage, I have recourse to a treatment which we shall shortly describe. But if the disease be so far advanced as to render the result of treatment very doubtful, I generally recommend the animal to be slaughtered, so as to expose the proprietor to the least possible loss. I do not wish it to be inferred from this practice that the disease in its second stage is necessarily incurable, for I have had some cases of recovery from it; but those instances are so few as scarcely to warrant one in running the risk of increasing deterioration in the value of the animal for the chances of recovery.

As regards treatment in the last stage, I consider the animal in so hopeless a condition that it is scarcely worth while having recourse to it, and I generally recommend it to be killed, in order to put an end to its sufferings.

That this report, therefore, may be of as much practical use as possible, we shall dwell at most length on the treatment of the first stage, not however omitting that of the second.

Treatment.

If, on examination, we find that the animal has a cough, but no particular loss of appetite, no dryness of muzzle, and no heaving at the flank, the best plan is to apply counter-irritants, such as setoning, or pegging in the dewlap: of the two, we prefer the latter, it

having proved more effectual. The operations may be performed as follows: If a seton be employed, a large and sharp seton-needle should be used, armed with coarse filleting or a mixture of tow and horse-hair; each end must be tied into a large knot. The seton should be dressed once or twice a week with strong blistering ointment. For pegging, an incision is made on either side of the dewlap with a pair of rowelling scissors, or scalpel, sufficiently large to admit the end of the fore-finger. The integuments are then separated from the cellular tissue beneath, between which parts two or three small pieces of the fresh root of black hellebore (*helleborus niger*) are inserted, or in place of these a small portion of tow besmeared with blistering ointment may be used. When the condition of the animal admits, an occasional purge of a ℔j or a ℔jss of magnes. sulph. should be given, combined with an aromatic, as ℥j of caraway or cumin seed powdered, to prevent any depressing effects that might attend its action.

But if, in addition to the cough, any symptoms of febrile disturbance should exist, such as unusual heat of the horns, dryness of the muzzle, accelerated pulse whether strong or oppressed, costiveness, or any of the symptoms before alluded to under the head of premonitory, which would lead us to suspect the approach of inflammation of the pleura, or of the lung itself, the animal should at once be removed into a comfortable and airy hovel, taking care at the same time to place it in such a way as not to expose it to any direct currents of air. It should then be bled, and that repeated, if necessary, within a few hours; but we have generally found one bleeding suffice, except occasionally in stall-fed beasts or cattle in high condition.

Bleeding is the most valuable means we can employ in order to restrain or extinguish the incipient inflammatory action of the lungs or pleura at this period.

Some general rules may be laid down with respect to the manner and quantity in which blood should be extracted. The earlier it is performed after the above symptoms have appeared the better will be the chance of recovery. The patient should be bled from a large orifice and in a full stream, and continued until some decided effect is produced upon the system, which may be known by the pulse becoming stronger if it were oppressed, or lowered if previously strong and full; the quantity to be drawn will also depend upon these circumstances. After bleeding, it will be advisable to have recourse to medicines calculated to promote the discharge of the secretions, and at the same time diminish febrile excitement. This object will be best gained by the administration of a saline purgative combined with potass. nitrat. and ant. tart. in something like the following form:—

℞ Magnes. sulphat..... lbj. to lbjss
Potass. nitrat..... ℥j to ℥ij
Ant. pot. tart..... ℥j.

This may be given once a day (till the bowels are freely opened) in two quarts of warm gruel, made either of flour or oatmeal, or in the same quantity of linseed-tea.

Should the before-mentioned symptoms increase in severity, the beast become more spiritless, cough and heaving at the flank more frequent, grunting louder, appetite nearly or quite gone, with other symptoms indicating that the second stage of the disorder has set in, the antiphlogistic treatment should be at once discontinued, and extensive counter-irritation had recourse to, and also the exhibition of remedies that will best tend to arrest the effusion and promote its absorption. Mercury possesses this peculiar power in a certain degree; but it is a medicine that requires to be closely watched, as it is liable to produce super-purgation, but not of such an uncontrollable nature as we have sometimes observed in the horse, when the smallest dose would produce this effect: it should be combined with opium to guard its action upon the bowels, and given in thick gruel, as in the following form:—

℞ Hydrarg. chlorid. ..... ℈j
Ant. pot. tart..... ℥j
Pulv. opii..... ℥ss, three times a day.

A seton, eight or ten inches in length, of coarse filleting, should be inserted on each side of the chest. The sides and front of the brisket, after being scrubbed with a coarse brush, and the hair removed with scissors, should be well rubbed with either of the following ointments:—

No. 1. ℞ Hydrarg. biniodid..... ℥ss
Pulv. lyttæ..... ℥j
Axungiæ ..... ℥iv. Mix.

No. 2. ℞ Pulv. lyttæ ..... ℥vj
Pulv. euphorbii..... ℥ij
Hydrarg. bichlorid. ..... ℥ss
Axungiæ..... ℔jss.

Should great debility exist, the following tonic draught may be given twice a day.

℞ Ferri sulph. ..... ℥ij
Pulv. gentianæ..... ..... ℥ij
—— sem. cumini ..... ℥ss
Sp. ætheris sulph.... ..... ℥ss

mixed in two quarts of gruel, to which half a pint of porter or ale may be added. Should diarrhœa exist, it may be checked by the use of opium and chalk given in starch gruel. This we have

often found to suspend the further action of the bowels for a considerable time.

Particular attention should be paid to the diet. In the first stage this should consist principally of bran-mashes, gruel, linseed-tea, &c. But in this advanced and debilitating stage of the disorder, should the animal shew any inclination to eat, it may be offered a few steeped oats, or malt-mashes, gruel, &c.: the skin should be kept warm with large rugs.

A great deal has been said in favour of the hydropathic system, and of its surprising powers in cutting short the course of this formidable disease. I have given it several fair trials, but, so far from its proving of any service, I have had reason to think that its adoption accelerated the progress of the disorder.

As before stated, I consider the last stage of pleuro-pneumonia so utterly hopeless, that to persist in further treatment would not only be an useless and painful proceeding to the lingering and dying animal, but would be involving the proprietor in unnecessary expense, so that, in order to terminate its sufferings, I invariably recommend the beast to be slaughtered.

Medical Reform.

THE annual meeting of the council and members of the National Institute of Medicine, Surgery, and Midwifery, took place in the council chambers of the institute, Hanover-square Rooms, on Friday, Aug. 16, for the purpose of receiving the report of the proceedings, during the past year, of the council, to carry out the objects for which the institute was formed,—that of a thorough reform in the system of education of medical practitioners, and the formation of an independent college of general practitioners; Mr. Nathaniel Clifton in the chair.

Mr. Williams, the secretary, read a very voluminous report of the proceedings of the council, the principal features of which were, that the difficulties which had retarded the settlement of the great question of medical reform had induced the council, on the 8th of August in the last year, to adopt a resolution with a view to conciliate, as far as possible, the adverse opinions that had been offered to the efforts of the institute for convening a conference of delegates from the various associations that had been established for effecting a reformation, and at the same time securing a settlement, of the main principles of medical legislation. The result of that conference was, that an application to the Royal College of Sur-

geons, to assist them in carrying out their object, was made, but that body declined to assist in any measure that would tend to convert it into a general college of medicine and surgery; and it was then determined to wait on Sir George Grey, for the purpose of urging on the Government the imperative necessity of an immediate incorporation of the body of general practitioners into an independent college.

Sir George Grey was accordingly waited on, and the objects of the institute explained to him; but the society were unable to obtain any pledge from him on the part of the Government that they would comply with the request of the council; although he admitted the force of the arguments used, and promised they should receive every consideration in any measure that might be brought before Parliament on the subject.

The report then proceeded to narrate the various correspondence that had taken place between the members of the conference and the Royal College of Surgeons; during which that body put forth the question whether, in the event of the course of studies to be followed by candidates for the diploma of the Royal College of Surgeons and the Royal College of General Practitioners being framed by mutual consent, in accordance with the regulations of each college respectively, the council would consent that the diploma of the Royal College of General Practitioners should be confined to the degrees of "medicine, midwifery, and pharmacy," thereby omitting the great point for which they struggled, and upon which they were at issue,—"surgery."

The council replied that they could not consent to surrender, on any condition whatever, the claim they had originally made and consistently maintained, that the proposed new college should possess the unrestricted right to examine their candidates in all the branches of medical and surgical science. In the first instance, the council of the Royal College of Surgeons agreed that the College of General Practitioners should have the power to direct the entire course of study to be followed, and to test the competency of the candidates for the diploma of the College of Surgeons by such examinations as they might deem necessary prior to their admission in the college. The council, on the part of the institute, were prepared to abide by that proposal, that the competency of the persons examined to practise surgery should not be specified in their diploma, such certificate in surgery being provided by a subsequent examination at the Royal College of Surgeons. The College of Surgeons, however, subsequently repudiated their proposition; and at the last meeting of the conference, in consequence of the difference that existed on the question of examinations in surgery, the conference was dissolved, and a letter

forwarded to Sir George Grey, apprising him of its failure and dissolution.

The council, then, feeling themselves at liberty to adopt an independent course for the attainment of their objects, convened a general meeting of the profession, with the view of explaining fully the difficulties in the way of a settlement of the medical reform question; the result of which meeting was, that it was agreed that a memorial should be presented to Sir George Grey, praying her Majesty to grant a royal charter of incorporation for the establishment of a college of general practitioners in medicine, surgery, and midwifery; and also to present petitions to both Houses of Parliament, setting forth the grievances under which the general body of practitioners laboured, and urging an alteration of the existing laws on the subject. In the year 1844, the Apothecaries' Society pledged itself to the advocacy of a charter of incorporation for general practitioners, and recognised the right of examining candidates for their diploma in medicine, surgery, and midwifery, and their readiness to resign the powers conferred upon them by the act of 1815 so soon as such charter should be granted; and up to a very recent period they had co-operated with the council for the attainment of that object; and the council referred with regret to a letter from that body to Sir George Grey, offering suggestions for an alteration of the act of 1815.

The council of the institute were, however, of opinion that the Apothecaries' Society, in endeavouring to effect an alteration of their act, did not aim at the removal of the important objections entertained by the profession. The council had, therefore, passed a resolution that they could not recognise or support any scheme for regulating the education of students in medicine, surgery, and midwifery, which was incomplete and inconsistent with the three branches, and repudiating the remodelling of either of the existing institutions unless they were based upon the unity of medicine and surgery; and proceeded to consider the propriety of at once framing a bill for the incorporation of the body of general practitioners into a distinct and independent college, and, to carry out that object, they sought and obtained an interview with Mr. Wyld, M.P., for the purpose of having his advice and opinion on the subject; and the honourable gentleman had strongly recommended the council to adopt the course suggested, and had promised to give it his cordial support. The bill was accordingly introduced to the House of Commons by Mr. Wyld, but, owing to the lateness of the session, it could not be proceeded with; but, in order to obtain the advantage of the co-operation and support of the profession, the council had issued 8000 schedules to the members of that body, and from upwards of two-thirds of that number they had received

replies favourable to the object of an incorporation of an independent college of medicine, surgery, and midwifery.

The report was adopted.

A vote of thanks to the council and chairman concluded the business of the day.

Foreign Extracts.

The Horses of Algiers.

M. Decroix, assistant veterinary surgeon to the 3d Regiment of African Chasseurs, has addressed a paper to the National and Central Society of Veterinary Medicine in France on this subject, having for its principal object the rectification of an opinion too generally admitted, that the French horses are inferior to the Algerines, in respect to vigour, stamina, action, and resistance of the causes inducing disease; and that large French carriage horses might be rendered of great service in Algiers, if not for troop horses, at least for agricultural and commercial purposes. M. Decroix has observed both breeds of horses—French and Algerine—under the most trying circumstances, travelling on hard roads, in forced marches, with scanty rations—under, in fact, all sorts of fatigues and privations; and he has come to the conclusion that the superiority of the Algerine has been greatly over-rated, and that the French horse has proved inferior only under circumstances not referrible to breed or stamina.

And M. Decroix observes, with great discrimination, that when an animal is transported from one country into another—as from France to Algiers—much must be allowed for change of climate, temperature, soil, &c., circumstances which appear to have escaped the observation of those who have disparaged the French horses; forgetting that, before they could compete with the Algerines, they required to be climated (*acclimatés*).

Another circumstance—and an important one—observed in making this comparison between French and Algerine horses, was, that entire horses, whether of one country or the other, bore fatigues and privations better than geldings. Whether mares fared better, M. Decroix does not inform us.

Barb horses are in general quieter and more tractable than French: it is rare to meet with a vicious one among them, though such instances have happened.

In respect to disease and casualties, taking their relative numbers and the circumstances under which they have been placed into consideration, it does not appear to have been greater, or even so great, in regiments horsed from France as in those riding Barbs.

The horses of Algiers are by no means suited for agricultural purposes, carried on as farming is in European countries. Until, however, such improved methods of tilling the land be introduced into Africa, they may serve such purposes as they are at present used for.

M. Decroix is of opinion that the breed of Algerine horses might be improved by a cross with the French. He would recommend that horses of large size be exported from such parts of France as are contiguous to the African coasts; but this must be done at the expense of the French, and should probably be done by the state, the Algerines themselves having no means of doing this. Also, he recommends that large mares be sent over—in preference to French entire horses—in order that they may be put to well-selected Barb stallions: an experiment, indeed, that has already been proved to succeed in the products of French mares cast out of the artillery and other regiments which have been purchased by the Algerines and covered by their own country stallions.

Rec. de Méd. Vét., Dec. 1849.

The Discovery of the Urino-biliary Calculus.

[From the Transactions of the Central Society of Veterinary Medicine of France for 1844-5-6.]

THE chemical analysis of concretions formed at the expense of the urinary principles, in the canine species, has already discovered to us that these morbid products may present divers compositions. A memoir published by us in 1828, in the *Journal de Chimie Médicale*, has shewn that all the vesical calculi found in dogs are comprisable under five species, so far as regards their constituent principles.

We have recognised a similarity in composition between many calculi in dogs and in men. And does not this resemblance arise from the striking analogy existing between the different functions in man and certain animals so much like him in their organization?

If the former observations, published by us, at different periods, on this subject, have put veterinarians in possession of a knowledge of the number of elementary substances entering into the composition of calculi, their different species and classification, ac-

cording to their frequency and rarity, the observation we have this day the honour of communicating to the Society is intended to shew the analysis of vesical calculi presenting, among their elements, the re-union of two organic principles;—one belonging exclusively to the products of the renal and urinary secretions; the other being as yet discovered nowhere save in the secretion of the liver. In this point of view these calculi have appeared to merit the attention of veterinarians; and the fact which we believe to have escaped observations, in man as well as in animals, may justify the name we have given to the calculus, of *urino-biliary*.

The animal, the subject of the present observation, was a bitch of large size, of the bull-dog breed, who died last month at the College at Alfort, of ascites. In her ureters, kidneys, and bladder, there were a considerable number of small calculi, of very irregular shape, and of a fine grass-green colour, which we were anxious to collect for the purpose of examination. Among the alterations observed ought to be mentioned that the renal substance exhibited a light yellow tint; and that the liver contained within its substance little whitish granulations having bases of phosphate of lime, with small cysts, perfectly circumscribed, of the size of large peas, which inclosed a soft matter, of a greenish grey, constituted of semi-coagulated albumen, mingled with a little of the green aliment of the bile, and phosphate and carbonate of lime.

THE CHEMICAL ANALYSIS OF THE CALCULI, conducted with every care, has given the following results:—

Uric acid	62·5
Green matter of bile	12·1
Ammonia	25·4
Traces of phospate of lime	
	100·0

Or, in consideration of the order in which the above products ought to be arranged,

Urate of ammonia	87·9
Green matter of bile	12·1
Traces of phosphate of lime	
	100·0

If the presence of uric acid, at other times rare in the vesical calculi of dogs, whose existence we have satisfactorily shewn in the present case, renders this observation curious, it is still more so in this respect, in our opinion, on account of this acid, peculiar to the urine of man and some carnivorous animals, being accompanied, in these calculi, with a principle proper to the secretion of the liver.

This mixed composition, instanced in the above analysis, and which up to this time has not been observed, at least that we know of, neither by chemists nor physicians, nor by veterinarians, seems to demonstrate that, under certain pathological conditions, the urinary organs and the liver are in such reciprocal relationship, that the functions of the one may at times compensate for those of the other, in a manner which certain physiological and pathognomonic phenomena have already made presumable to us.

Transactions of the Central Society of Veterinary Medicine of France for 1844-5-6.

VETERINARY JURISPRUDENCE.

ARMAGH QUARTER SESSIONS—*July* 2.

RYAN *v.* SMALL.

Singular Case.

MR. QUIN said he appeared in support of the charge brought in this case by his client, the plaintiff, for deceit, in having certified that a horse, now in the possession of Mr. Ryan, was sound. He confided in that representation, and then complained that he had been deceived; and that another certificate, stating the reverse of the former, had been signed by the defendant on the 14th of May.

Mr. Barker, on behalf of Mr. Small, said that this was an action for deceit, and not within the jurisdiction of a civil-bill court, or of his honour the Assistant-Barrister.

Mr. Quin said he did not agree with that opinion. The jurisdiction was in this case in that court as in the nature of an action of assumpsit, the defendant having, for a certain reward, signed certain certificates, and deceived the plaintiff.

Mr. Barker continued to hold his opinion that the civil-bill court could not try an action for deceit. There the actions did not lie.

Mr. Quin urged that cases of an analogous nature, such as for goods sold and delivered after representing them as sound and good, when they proved subsequently not to have equalled the description of them, would be deceit, and would be entertained.

Mr. Barker said he had received that morning a letter from Mr. Small, who was not in court himself, as he had no idea that such an action could be brought there.

The case then stood over for some time, other cases having in the interim occupied the attention of the court. When the case was resumed, the learned Barrister observed, that he feared he had not the power of disposing of it. The allegation was, that the defendant told a falsehood ; but it was indispensable to shew that he had known it to be such. A fraudulent misrepresentation—an act of deceit if it be proved—if he gave a certificate of the soundness of the horse, that he was perfectly sound, and that he knew he was not sound ; but although it was an action of deceit, he had no jurisdiction, and would order the case to be struck off the list.

Mr. Quin requested the Barrister to allow the case to stand over for a moment.

When again resumed,

Mr. Quin re-argued the case, produced authorities, named analogies, and quoted some precedents from an old law work, (Cunningham's Law Dictionary, &c.). The learned Barrister commented on these authorities, which he did not consider bore sufficiently on this case to induce him to change his view of it, as this was entirely a question of jurisdiction.

Mr. Small, it appears, consented to their going into it, however, and the proceedings were continued.

Mr. Quin began *de novo,* and repeated that this was an action brought by Mr. Simon Ryan, of Armagh, merchant, against Mr. Matthew Small, veterinary surgeon, for deceit. As in consideration of a certain fee from Mr. Ryan, paid him in his professional capacity, the defendant gave certificates regarding a horse bought from Mr. Lavery, of Lurgan, for the sum of £13..10s, which he certified as sound on the 1st of May : some days after, Mr. Smith examined him, and certified, on the 7th, that he was bone-spavined. Mr. Ryan intending to sell the horse on the 14th of the same month, on that day Mr. Small examined him, and certified that he was perfectly sound ; but owing to the certificate of the 14th May, Mr. Ryan could not sell the animal by auction, on account of Mr. Small having deceived him, because this contradictory certificate was given by the defendant, who did not know the horse again. An enlargement of the flexor tendon might have occurred within the time, but not the bone spavin. On the 14th of May the defendant deceived Mr. Ryan, by declaring he would wager £100 that the horse would never be spavined, and that he would at any time get the money he had paid for him.

Mr. Hugh Lavery proved the sale of the horse on the 6th of May to the plaintiff, having had Mr. Small's certificate that he

was sound. He would not have sold the horse to Mr. Ryan, had he known that he was spavined.

Mr. Smith proved that on the 7th of May he had examined the horse in question, and certified that it was at that time unsound.

Mr. Small had denied Mr. Smith's capabilities, but he had transacted business with Mr. Small and Mr. Lillyman for years, and told Mr. Ryan that Mr. Small had deceived him, although, agreeably to a bill read in one of his Banbridge bills, that in the veterinary department the same Mr. Smith was a person *competent* to examine horses as to soundness, and also to operate and prescribe; and had announced that Mr. Smith would reside at Mr. Small's establishment at Banbridge, which was under the patronage of the most noble the Marquis of Downshire, and that Mr. Small of Newry and Mr. Marshall of Armagh would attend every Monday.

John White proved that, on the 7th of June, defendant certified that the said horse was bone-spavined.

Another witness, John Byers, was present, when on the 14th of May the defendant examined the horse, and said he never would be spavined.

Mr. Quin handed up other authorities to induce the Barrister to admit that he had jurisdiction: his Honour was reluctant, but yet heard the arguments used to induce him to allow it.

Mr. Small admitted the certificates: a horse may be sound, and yet in one week changes might occur in the state of the animal; adding, if the plaintiff let the horse rest under his medical treatment, he would in a week be able to give him a sound certificate again. The certificates were then read, and following are copies:

"*Small's Horse Bazaar, March* 1, 1850.

"1. This is to certify that I have this day examined a bay horse by request of Mr. John Conolly, which is at present sound."

"M. Small, V. S."

"2. This is to certify that I have this day examined a six-year-old bay gelding at the request of Mr. Simon Ryan, which is at the present time unsound, having bone spavin on both hocks.

"Wm. Smith, Veterinary Surgeon."

"May 7th, 1850."

The following was on the back of No. 1:—

"3. I certify that, having re-examined the bay horse, of which this is a certificate of a former opinion, he still continues perfectly sound. Fee 5s. paid.

"M. Small."

"Armagh, May 14, 1850.

"4. This is to certify that I have examined a bay horse by request of John Wite, which is unsound, having an enlargement of the flexor tendon of the near hind leg, and bone spavin on the off.

"M. Small."

"Moy, June 7, 1850.

"5. This is to certify that I have this day examined a bay horse, a six-year, by request of Mr. Ryan, which is at present unsound, having an enlargement of the flexor tendon near the hind leg, not spavined.

"M. SMALL, V.S."

Mr. Quin commented on these certificates, contending that they proved the charge of deceit.

The learned Barrister said this case could not be disposed of in that court, and he thought it was properly a case for a superior court: the parties may go to the Assizes.

Ultimately the case was sent to be heard at the Assizes, which commenced in Armagh next day.

PROCEEDINGS OF THE COUNCIL OF THE ROYAL COLLEGE OF VETERINARY SURGEONS.

Special Meeting, held 12th August 1850,

FOR THE PURPOSE OF "considering Mr. Wilkinson's motion for publishing the Proceedings of the College, and of considering the proposed Code of By-Laws, in connexion with the legal opinions given thereon."

MEMBERS PRESENT:—The President, Messrs. Simonds, Burley, Cherry, sen. and jun., Morton, Peach, Wilkinson, Henderson, James Turner, Godwin, Percivall, and the Secretary.

The Minutes of the last meeting having been read and signed,

Mr. WILKINSON rose to bring forward his promised motion; which, after some prefatory observations from him, and remarks from several other members of Council, was reduced to the following series of resolutions:—

Moved by Mr. Wilkinson, and seconded by Mr. Percivall,

"That a reporter be employed, and that he shall take a verbatim account of proceedings of Council, which report he shall afterwards reduce to writing in the usual way."

"That there shall be a Committee of Supervision of three appointed by the President at each meeting from amongst the Members of the Council."

"That this Committee shall prepare the Report for publication, but shall in nowise whatever alter the spirit or meaning of the observations of the different members who may have taken part in the proceedings."

"That this prepared Report shall be published only by the express permission of the Council, and, of course, at the discretion of

the editors of those journals which are exclusively devoted to the veterinary profession."

"That an abstract of the verbatim Report be also delivered by the reporter to the Committee of Supervision."

"That the permission of the Council is hereby given for the publication of the Reports as prepared by the Committee."—Carried seriatim.

In the course of consideration of the proposed By-laws, several alterations and amalgamations were made, and the following motions proposed and decided on :—

It was moved by Mr. A. Cherry, and seconded by Mr. Gabriel,

"That all candidates for the Council shall be proposed previous to being ballotted for."—Carried.

By Messrs. Gabriel and Percivall,

"That the Professors and appointed Lecturers of any veterinary school sanctioned by the Charter shall be *ex officio* Members of the Board of Examiners."—Carried.

By Messrs. Wilkinson and Simonds,

"That the Principal Veterinary Surgeon be an *ex officio* Member of the Examining Board."—Carried.

By Messrs. Morton and Simonds,

"That the sum of Five Guineas be paid into the hands of the Secretary as an examination fee, instead of Ten Guineas."—Lost.

By Messrs. A. Cherry and Cherry, sen.,

"That law 35 B be expunged from the proposed laws."—Carried.

By Messrs. Simonds and Morton,

"That the clause 35 A be suspended until a conference has taken place between the Council of the Royal College of Veterinary Surgeons and the Governors of the Royal Veterinary College."—Lost.

By Messrs. Gabriel and J. Turner,

"That the By-law 35 A be adopted."—Carried.

Adjourned.

THE VETERINARIAN, SEPTEMBER 1, 1850.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

IT is now almost three years ago since—it was in THE VETERINARIAN for October 1847—we called the attention of the veterinary profession to the insufficiency of ventilation, of itself, to free our stables—and we may add our cow-houses, and our cattle

and sheep in-door habitations in general—from those impurifications which the atmospheres of such confined localities sustain from the effluvia arising from the excretions, the dung and urine, suffered too long to remain in or diffused about them; and with which the soil constituting the flooring, or the interstices in the pavement of such flooring, becomes necessarily soaked and saturated, giving rise to the well-known *smell* of the stable, the cow-house, &c. All that ventilation can effect is to give exit to any noxious gaseous matters which may float and ascend in the imprisoned air; and as fast as they rise others will be found generating below to supply their place; so that, in point of fact, the atmosphere may be rather said to be kept at a certain standard of impurification than at any period to be depurated or purified by any such process as ventilation. In saying this, we are not decrying ventilation; we are merely shewing its insufficiency *alone* to answer the purpose it commonly is supposed to do, viz., to free the atmosphere of the stable of its contaminations.

In the article to which we have in the beginning of the present one made allusion, we insisted—and we here repeat what we then stated—that the contaminator of the stable atmosphere should be attacked at its *source;*—that measures ought to be adopted either to neutralize or to suppress the effluvium, the product of the urinary and alvine excretions. To this end, we then submitted accounts of the alleged efficacy of certain "deodorizing," and said to be "disinfecting," fluids bearing the names of their respective compositors—Ellerman, Burnett, and Ledoyen. We likewise submitted some experiments we had made ourselves with the sulphuric acid of commerce, the refuse sulphate of lime as obtained from the manufacture of acetic acid, and the nitrate of lead. We now suggest for the purpose mentioned, still for experiment, as another purifier, a production which has been of late, and is at the present moment, engaging much of the attention of the agricultural world, called *peat charcoal.* We have not, as yet, had any opportunity of making trial of this old-fashioned substance in a new form; though, we think, our readers will agree with us, that, from the subjoined accounts of its deodorizing, and as it would appear disinfecting, properties, it certainly holds out strong temptations for experiment.

We learn from *The Mark Lane Express* of the 12th ult., "that several noblemen and gentlemen, deeply interested in the question of sanitary reform, by which the health and condition of the poor in our cities and towns may be improved, and who are equally interested in ameliorating and giving employment to the Irish peasantry, and in the development of the vast resources of Ireland, met on Saturday, the 3d instant, at the house of W. Pinney, Esq., M.P., Berkeley-square. The particular object of the meeting was to hear a detailed account, by Jasper Rogers, Esq., Directing Engineer of the Irish Amelioration Society, who was called on to prove by facts the theories he has propounded for the last three years, and to test which the Irish Amelioration Society was formed. The most important of these facts, amongst many of minor consideration brought forward by Mr. Rogers, was, that by a very simple means all the filth that now passes through our sewers, poisoning the waters of our rivers by its deposits, and the air by the exhalation of its gases—spreading widely, as well as originating, the most fearful epidemic and zymotic diseases—by which the poverty and misery of the labouring classes are increased, and the lives of their families unnecessarily sacrificed, could be arrested in its progress either to or through the sewers; and by its admixture with peat charcoal, this, the most obnoxious and pestilent filth, might be converted into a very cheap and portable, but highly valuable, manure.

"Considerations of equal magnitude and importance, as regards the amelioration of the condition of the Irish peasantry, were connected with these plans: for the conversion of the peat bogs of Ireland into charcoal for sanitary purposes would give employment to many thousands of the Irish peasantry (the only and true means of ameliorating their condition); and land, now wild and dreary wastes, would be reclaimed, and rendered amongst the most fertile of that naturally rich but most unfortunate country."

* * *

Mr. Pinney, who was warmly greeted, rose and said, after descanting largely on the properties and uses of peat charcoal,

"I am not aware whether the properties of peat charcoal, when mixed with nightsoil as a manure, are generally known. They were tested a short time since before two meetings. One experiment was made at the Mechanics' Institute in the presence of between 600 and 800 persons. On that occasion a large quantity of offensive matter was brought forward—we shall not now repeat the experiment [*laughter*]—and mixed with the prepared peat charcoal in a large machine. Immediately afterwards the combined matter was shovelled or spouted out in a dry state, and deposited

in bags, without giving the slightest offensive smell. This shews that it can be carried anywhere in a dry inoffensive state. Some of the spectators took away a portion of it in their pockets."

* * *

"Another trial of its properties was made before Lord Lyttelton and the Rev. Mr. Girdlestone, which exhibited a most remarkable feature in the properties of peat charcoal. Several chemical compounds, prepared by Sir W. Burnett and Mr. Ellerman, to disinfect or deodorize feculent matter, were tested, and were proved much inferior to the peat charcoal; for it not only deodorized the feculent manure, but positively deodorized the other compounds recommended by Sir W. Burnett and Mr. Ellerman, freeing those very compounds from the offensive smell which they had imbibed in their action on the manure, or had originally possessed. But it may be said, Now that you have got your manure, what will you do with it? I am gratified in being enabled to inform you that it has proved itself to be a powerful agent in arresting and preventing the potato blight. This has been evidenced by gentlemen of high standing and the most consummate experience, who state that where, in the first instance, they manured the land for potatoes with peat charcoal manure, and the planting took place early in the season, they altogether escaped the disease; while, upon the application of the manure to beds that were diseased, the blight gradually and totally disappeared."

* * * *

Major General M'Cleod rose, and said: Here is a letter from Dr. Fergusson to me on the subject, which I beg Mr. Rogers to read.

Mr. Rogers accordingly read the subjoined letter:—

"16, George-street, Hanover-square, Aug. 2, 1850.

"My dear Sir,—I am so engaged that I cannot attend your meeting to-morrow, but I wish the object of it every success.

"Having had the opportunity of appreciating the deodorizing effects of the peat charcoal, as prepared by Mr. Rogers, I can bear testimony to its wonderful influence; and since I witnessed these experiments, I have had the additional opportunity of testing the powers of this material in my own professional avocations. I have used it extensively as a deodorizer in the wards of King's College Hospital, and invariably with excellent results. In particular I may mention two examples in which it proved of great service. In these cases the bowels discharged their contents through unnatural apertures in front—in the groins. In such instances hitherto it has been almost impossible to keep patients in any degree of comfort, the offensive smell causing the utmost annoyance to themselves and those around: such happened in one of

these instances, when I thought of mixing the powdered peat charcoal with the linseed poultice, which was constantly in requisition. The effect was in a measure perfect; there was no longer that offensive stench so familiar in such cases. The other instance was treated in a similar way with like effect. In sloughing sores, and in certain forms of open cancer (in which cases the smell is usually very bad), I have been equally well pleased. In short, I may say that I have this preparation in almost constant use, and it possesses this advantage over many others intended to produce similar effects, that there is no unpleasant or questionable odour in itself.

"It is but right to mention that ordinary charcoal has been used occasionally in many parts of the world, partly with the objects above referred to; but I do not think that the attention of the profession has been much drawn to the subject. However largely it might be used by the profession for the purposes alluded to, I fear that no great profit could be anticipated from the necessarily limited demand; yet as one out of the many excellent qualities of this material, this feature should not be overlooked.

"If these statements can be of any use to you to-morrow, or at any other time, I have much satisfaction in placing them at your disposal.

I am, my dear Sir,
Always faithfully yours,
WM. FERGUSSON, F.R.S., Professor of Surgery in King's College."

"To General M'Leod."

Mr. Rodgers having read Professor Fergusson's letter, continued: I have made every possible experiment to satisfy myself of its deodorizing qualities. I have placed it on plates or dishes in vaults, in close rooms, &c. &c., and other places emitting offensive odours, and in every instance found the experiment eminently successful. I must confess that at first I was sceptical, more especially when applied for the purpose of *purifying the atmosphere* in sick rooms. But my experiments never failed; and all doubt is removed by the following case, which I give on the authority of a medical practitioner of eminence, who is present—Mr. Bullock, of 15, Cumberland-street, Bryanston-square, which is thus recorded by him:—

"Chloride of lime, and other disinfectants, had been used to destroy the effluvia in the chamber of a patient of Mr. Bullock's; but the change of atmosphere of the room was as obnoxious to the sense as the effluvia itself; and a lady, the mother of the patient, fainted if she remained in the apartment. An experiment was tried with the peat charcoal; a small quantity of it was spread

on trays, and placed in the different parts of the chamber, which in a very short time (to use the words of the lady) became as pure as her drawing room; and though the patient became worse and died, she was able to sit by his bedside while he lived, without experiencing the slightest inconvenience; and even after his death, the atmosphere of his chamber was completely clear of the least offensive smell."

But let me describe to you an operation performed at Windsor, in a house within five hundred yards of where the royal standard of England flies. During the prevalence of cholera there, and when the Queen was expected, I was requested by the Board of Health of Windsor to examine a house, whose inhabitants complained they could not continue to live in it unless a cesspool at the back was removed. This could not then be done. The smell was so intolerable, that the windows could not be closed for a few hours; if they were, the tenants were compelled to seek fresh air by opening the doors, even during the night. I examined the house, &c., and found that ammoniacal sulphuretted hydrogen rose by capillary attraction through the walls, and into the room. The plate, and even the painting of the closet doors, were blackened by its action. I placed a lining of three brads, six inches from the wall, and then filled in between granulated peat charcoal, and *in less than half an hour the room was completely deodorized*—so much so, that a child about eighteen months old, who previously, its mother told me, would never endure the room for a minute, remained in it without any complaint.

* * * *

Mr. Rogers.—If you wish to deodorize "stagnant pools" or sewers, simply strew half-an-inch of the prepared charcoal over the surface. So long as it prevents contact with the atmosphere, no ill effects can take place. Every grain of the charcoal takes up ninety times its own volume of the offensive gases.

* * * *

Mr. W. White stated that he was a practical chemist, and had examined the charcoal produced from the turf of England, Ireland, and Scotland. He found in that from Ireland eighty-seven per cent. of pure carbon, and but about two per cent. of silica. In the peat charcoal of England he had found a great deal less carbon, and a great deal more silica; but he could not certainly agree with Mr. Rogers as to the value of the manure to the extent stated. There could be no doubt it was a valuable manure, but he thought it wanted more phosphates. He ascribed the difference of the turf of the different countries to the soil from which it sprung, and therefore thought there would be a great difference in different bogs.

* * * *

Mr. Wakley, M.P.—In referring to Mr Rogers' statements, I think, if my memory does not deceive me, that he attributed "disinfecting" qualities to the peat charcoal. So that, according to him, it is a disinfector as well as a deodorizer. Perhaps the terms are with him synonymous. In either case he is wrong. As a medical man, I can state that there is no analogy between infection and smell. You may deodorize a room, but you cannot by the same agency destroy the infectious disease. You may deodorize an hospital, but you cannot by the means of peat charcoal destroy the infectious qualities of small-pox, scarlatina, or fever. I therefore think that the term should be strictly limited to the qualities of the peat. And as other proprietors of bogs may think that they have similar means of producing an article in every requisite equal to that which is produced in Ireland for manure, deodorizing, and general domestic purposes, we should at once prove the superiority of the Irish bogs—if they are superior—to prevent other persons embarking into the speculation in which the society is now engaged, and thus secure it from the evils that naturally attend competition and rivalship in any undertaking or speculation.

We, probably, have extracted sufficient from the report in question to draw veterinary inquiry to the matter. Whether peat charcoal—the cost of which in Ireland is about 35*s*. per ton—be found anywise suitable for such a purpose as is here set forth, remains to be shewn; and whether it be or not, one thing is certain, and that is, that we cannot rest content with ventilation as the sole or, indeed, of itself, an efficient means of purifying our horse and cattle habitations.

MISCELLANEA.

Chloroform in Veterinary Practice.

A few weeks since we gave an account of the firing of a horse under the influence of chloroform, at the stables of Mr. Stanley, veterinary surgeon, of this place. The statement was read with much interest by those who knew the severity of the operation, and the fact was, by them, hailed as the introduction of a more humane practice than had hitherto been obtained. Since that time, other horses have been similarly treated at the same place; one on Friday last. This was a powerful half-bred mare, belonging to Mr. Reynolds, of Farthinghoe. The animal was thrown, in the usual manner, upon straw. Dr. R. S. Wise then applied chloroform upon a sponge to the nostrils, and in exactly three minutes and a

half declared the mare insensible to pain. Mr. Stanley immediately began operating. On the application of the iron there was no shrinking or starting; the burning was continued with the application of fresh irons, and the incisions were unusually deep, the case being a long standing one. There was an occasional struggle, which Dr. Wise said was caused by the dropping of chloroform from the sponge into the nostril. When the operation, which occupied from a quarter of an hour to twenty minutes, was completed, the shackles were removed, and the animal remained perfectly quiet, as if in easy sleep; the legs were moved about by the bystanders, and remained where they were placed. After a short time, the mare opened her eyes languidly. A little cold water was then thrown upon her head, and she started to her legs and looked about rather wildly. Water and hay were then offered to her, and she readily ate and drank. When she was first thrown her pulse was at 46; when the operation was about half completed, it was 43; and when it had ended, it had sunk to 40; shewing that, even during this very severe operation, the system, under the influence of the chloroform, was gradually recovering from the excitement caused by throwing. After such experience as this, we cannot imagine that any one who has an animal which it may be requisite to submit to the severe operation of firing, will suffer that operation to be performed in any other way than the one we have described.—*Banbury Guardian.*

The Hedgehog.

The other day a friend of mine caught a hedgehog, probably about a month old. It was placed on a large grass-plot in the evening; and being wishful to know what really was the food of this animal, I kept close to it as it walked about fearlessly around my feet. It ate grubs and toad-stools, and seemed to relish them very much. I captured a young sparrow, nearly fledged, but not able to fly. I placed this before the hedgehog. He turned up his little snout, and seeing the sparrow running and fluttering, he immediately gave chase and caught him, and began eating it, beginning at the head first, swallowing feathers and all. You hear people continually crying out against the poor hedgehog for sucking the cows' teats in the fields, and thereby robbing the owners of a quantity of milk. The hedgehog, I know, is often seen, particularly early in the morning, close to the cow's udder. Why is this? Simply because he has come to feed upon the insects which have collected there to suck up the moisture which exudes from the udder and teats. If any body could give me positive proof of their having seen the hedgehog sucking the teats of a cow, I should be extremely astonished and obliged.—*Zoologist.*

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CONTRIBUTIONS TO THE PATHOLOGY AND PRACTICE OF VETERINARY MEDICINE.

By W. HAYCOCK, *Veterinary Surgeon,*

(Member of the Veterinary College, Edinburgh)

King Street, Huddersfield.

NINTH AND LAST CONTRIBUTION.

Purpura Hæmorrhagica—Scarlatina, &c.

CASE I.

February 4th, 1847.—I WAS requested, about eight o'clock A.M., to attend upon a horse, the property of Uriah Tinker, Esq., of Bent House, Meltham, near Huddersfield.

History, &c.—The animal in question is rising five years of age—stands about fifteen hands high—is three parts bred, or near upon it—and is of a light chestnut colour. During the last five or six days this horse has laboured under a very severe attack of epidemic catarrh: the symptoms were, soreness of the throat, attended with difficult deglutition—a very severe cough—and acceleration of breathing. The animal has not been treated for the above, except by clothing him warmly, giving him mash diet, and allowing him gruel and warm water to drink. Last night his limbs began to swell, and when the groom entered the stable this morning they were found so enormously enlarged, and the animal apparently so much worse, that a messenger was dispatched to request my immediate attendance.

Present State.

1. Pulse 72, and respirations fifteen per minute: the pulse is feeble in its character, but the respiratory act is not attended with any peculiarity.

2. The whole of the limbs are enormously swollen: the swelling extends from the feet to the junction of the limbs with the body, where it terminates abruptly.

3. The lower part of the face is also greatly swollen, particularly the lips and the nostrils: the eyelids are also swollen considerably.

4. The swelling in every part is hot, hard, and acutely painful if pressed upon; and in those parts of the skin free from hair (as the lips, nostrils, and inside of the hind limbs) the surface of the swelling is glistening and shining.

5. Pustules or vesicles, of about the size of a pea, are present upon the lower part of the limbs: they are plentiful in and around the anterior region of the hock joints, and also around the fetlock joints; occasionally these vesicles burst, and discharge an amber-coloured serum.

6. The mucous membrane of both nostrils is covered with irregularly formed patches of a dark red or purple colour; from which is discharged, in great profusion, a bloody muco-serous matter.

7. Every time the expiratory effort takes place, a snuffling sound is heard in the nasal passages.

8. Great soreness of the throat is evinced when the animal attempts to swallow water, or fluids of any kind.

9. The animal is affected with a very severe cough, which is hard-sounding, and of a suffocative character.

10. It is with difficulty he can be made to walk; his limbs are moved stiffly, and in a straddling manner: this stiffness has been present during the last three days.

11. The neck on both sides is swollen over the region of the parotid glands—the swellings are hot and tender to the touch.

12. The eyes, and the countenance generally, present a peculiar dejected aspect.

13. The animal has not dunged nor urinated for a considerable time.

Treatment.—The neck to be blistered along the course of the trachea—the limbs to be bandaged with linen bandages, made wet by being dipped occasionally in hot water. Give the following in a drench:—

℞	Antim. tart.....	ʒjss
	Camphor	ʒj
	Aloes Barb	ʒiv
	Belladonnæ Tinct.....	ʒjf
	Aquæ.....	1 pint

To have, also, acetate of ammonia ʒij, in aquæ ʒiv, every four hours: to be warmly clothed, and fed upon boiled corn and mashes, and to have thin gruel to drink.

6*th.*—The limbs are not so acutely painful, nor the swellings so hard, but the blood pustules are more numerous than yesterday, and the discharge from them more copious; he also moves better in his box. The discharge from the nostrils has now become pu-

rulent, and free from any admixture of blood—the dark patches have sloughed away from the nasal membranes, leaving a raw surface—the throat is better—cough not so violent. Pulse 80, and respirations 16 per minute: he has partaken of a small portion of hay. Bowels not yet acted upon—and the urine is scanty, thick, and white in colour. Repeat medicine; continue also the acetate of ammonia. To be likewise steamed with a mixture consisting of turpentine and vinegar, poured upon a red hot brick, and the head of the animal to be held over the fumes, by which means he may freely inhale the vapour. The bandage to be saturated in hot water; and applied to the limbs as before.

7th.—The swelling in connexion with the limbs has subsided considerably, but he moves more stiffly in the fore legs than he did: the fetlock joints are covered with vesications or pustules, which are constantly bursting and discharging serum: the bowels are freely acted upon, and the neck is also sore from the blister. The upper lip is enormously swollen; the discharge from the nostrils copious as ever, which discharge is again mixed with blood. The throat is better, and also the cough. Pulse 90, and respiration 16 per minute. To continue the use of the fumigations, and the acetate of ammonia to be limited to three doses per day, morning, noon, and night.

9th.—During the night the animal laid down, and rested well: swelling of the limbs better—swelling on the upper lip worse; the throat considerably better, and the cough also. He occasionally drinks a little aired water. Appetite bad, dung pultaceous.

℞ Spt. nitre ..... ℥j
Acetate ammonia .... ℥ij
Aquæ ... . ℥vj.

To be given morning and night, the animal to have new milk to drink morning and night, if he will take it; and any thing to eat he will take in addition.

From this time I did little to the animal in the way of giving medicine. The owner occasionally gave him small doses of aloes, for the purpose of keeping the bowels open. I visited the horse for the last time on the 14th, when I was informed that generally about eleven o'clock in the forenoon he began to be worse, at which time the pulse rose in the number of its beats, and the respiration became greatly hurried; and that, during the existence of such relapses, they always had recourse to steaming the breast with the turpentine mixture, which appeared to afford almost immediate relief. I happened to be present when one of these attacks manifested itself: the pulse rose to 80, and the respiration to 18 per minute. The steaming process was at once resorted to, but not with that benefit which was anticipated. At the date to which I have just referred, the mucous membrane of the nostrils retained

a high degree of colour, but the colour was of one uniform depth; purulent matter also issued from the nostrils. The cough was gone, or nearly so, and the soreness of the throat had entirely subsided. The swelling of the limbs had disappeared, save between the hock and the fetlock of the right hind leg, which space was greatly smaller, accompanied with soreness of surface, which at times bled profusely: similar sores also existed in the regions of all the joints, but of smaller extent. All the sores suppurated, more or less, matter of a healthy kind: the appetite was also pretty good; and the general condition was evidently improved. I directed the acetate of ammonia and spirits of nitre to be occasionally given to him, and the sores on the limbs to be dressed with a very weak solution of chloride of lime.

I saw Mr. Tinker again on the 20th, when he informed me that, since I had seen the animal, he had continued to improve; that he fed well, walked much better, lay down regularly, and that the sores upon his limbs were healing fast. The animal ultimately recovered, and did well.

Case II.

March 26th, 1847.—I was requested, about ten o'clock A.M., to attend upon a mare, the property of Messrs. Benjamin and James Sheard, corn-dealers, &c. residing within a short distance of Huddersfield.

History &c.—The mare in question is rising six years of age, of a dark bay colour, half bred, and stands exactly fifteen hands three inches in height. She has been the property of the Sheards about two years, during which period she has several times suffered from colic, from catarrhs, and from loss of appetite. I attended her about two months ago for a severe attack of colic; soon afterwards she laboured under catarrh, for which she was not treated: this latter attack, left her with a severe hard, loud, and dry-sounding cough, which exists at present. She is considered by her owners to be a mare of tender constitution, and is mostly used as a hack; sometimes for harness purposes, and occasionally she is worked in the chains. If she stands in the stable for a few hours, her hind legs begin to swell, which tendency has existed from the time she first came into the hands of her present owners, and for how long before I cannot learn. Eight days ago she was ridden into Lancashire: the journey was a long and weary one, the weather wet and stormy; and ever since her cough has been more severe, and her general condition has sunk to some extent. During the last three or four days her appetite has failed, her legs have also swollen more, and her gait has become stiff. This morning she was found to be so much worse, that I was requested to attend.

Present State.

1. Pulse 75, and respirations 18 per minute.
2. The eye looks languid, and is expressive of pain.
3. All the limbs are considerably swollen; the swelling extends from the tops of the hoofs to the junction of the limbs with the animal's body, where it terminates very abruptly. The swelling extends completely around the limbs, and those parts which are free from hair have a glistening aspect.
4. The swelling in every part is hot, hard, and acutely painful if pressed upon.
5. She stands fixedly, her legs wide apart, and her head held low.
6. She coughs occasionally; the cough is hard, dry, and loud sounding.
7. Occasionally thick clotty matter, of a white colour, is discharged from both nostrils.
8. It is with great difficulty she can be made to move from where she is standing, which she does with a straddling gait; and the limbs are carried more as though they were posts than any thing else.
9. She has no appetite, and has not dunged nor urinated, apparently, for a considerable period.

Treatment.—The animal to be comfortably clothed, and the limbs to be bandaged; her diet to consist of bran, boiled corn, and carrots. Gave the following in a draught:—

℞ Aloes Barb. ..... ℥vj
Camphor ..... ʒj
Antim. tart. ..... ʒj
Aquæ ..... ℥viij.

27*th, Three o'clock,* P.M.—The mare to-day, apparently, is better; the physic is operating in a very gentle manner; the appetite is improved; she is more lively in appearance. She moves better when made to walk. The limbs are, perhaps, a less little swollen; at any rate, they are not so tender when pressed upon as they were yesterday. Pulse 70, and respirations 15 per minute.

℞ Antim. tart. ..... ʒj
Camphor ..... ʒj
Potass. nitratis ..... ʒij
Aquæ ..... ℥vj

The above to be given immediately. At seven o'clock to night the animal to have liquor potassæ ʒij in aquæ ℥viij.

28*th, Eleven o'clock,* A.M.—To-day the mare is much the same in every respect as yesterday; the appetite is moderate. To have

liquor potassæ ʒij in aquæ ℥viij immediately: the same quantity to be given to-night at eight o'clock, P.M.

29*th*, *Ten o'clock*, A.M.—The mare is still purged, but not violently; the limbs are more swollen, but the swellings are softer to the touch, and are not so tender. The appetite is greatly improved; the bandages on the hind limbs are stained with blood-stains; and, upon removing them, I find that around the fetlock joints a number of vesicles have made their appearance, which occasionally burst, and discharge a cinnamon-coloured fluid. The cough is better. Pulse 60, and respiration 15 per minute. She moves with more freedom, but she has not yet lain down. Continue medicine as before.

April 1*st*.—To-day I find a large swelling extending along the inferior region of the right side of the abdomen; it is tender, hot, and pits upon pressure. The lower part of the right side of the face has begun to swell considerably; these swellings were noticed for the first time yesterday: the swellings on the limbs have subsided, I should say, to one-half their former size. Appetite good, walks better, and is lively in appearance: she has not yet lain down. Pulse 74, and respiration 16 per minute. Dungs regularly, but urinates very scantily. To have ammoniæ ʒij in aquæ ℥viij, morning, noon, and night, until further change is deemed necessary: to be fed as usual, and, when the weather permits, gently exercised.

April 3*d*.—To-day I find the mare very much better. Pulse 54, and respiration 14 per minute. She eats well, particularly of carrots; swellings greatly subsided, but large sores are present upon the limbs. A sore of about eight inches in circumference exists upon the fetlock joint of the left fore limb, also upon the fetlock joint of the right hind limb, and upon the left hind limb near the hock joint, upon its outer side: all the sores are angry-looking, and discharge a large quantity of healthy-looking purulent matter. To continue the use of the ammonia as before, and to apply a weak solution of chloride of lime to the sores two or three times daily.

I did not see the animal again until the 19th; I heard, however, several times to the effect that she was improving, and that she continued to do so until the 17th; when, it appeared, she was allowed access to the farm-yard adjoining the stables; that, during the time she was out, it came on wet and cold, to which she was fully exposed for more than three hours. She was found in a corner of the yard, trembling violently, and breathing quick: she was then taken by one of the men and put into the stable, and, I believe, left without any further care.

The morning following she was again off her food, and, from what I could gather, must have been otherwise ill. On the morn-

ing of the 19th, however, I was again requested to attend upon her, when I found her as follows:—Pulse 84 and respiration 22 per minute; the mucous membrane of the nostrils is of a leaden hue; the sores on the limbs are nearly healed; limbs not swollen, except the hind ones, which are enlarged from the hocks downwards. Swellings, however, exist on the anterior part of both scapulas, also over the lumbar region, and for a short distance along the course of the spine. She moves in a very rigid manner: the eyes have a dull lifeless aspect; appetite completely gone; she has not, in fact, eaten anything for the last twelve hours. Altogether she appears in a transition state, or as passing from life into death. I immediately had recourse to diffusible stimulants, and I gave her spts. of nitre, ammonia, and brandy; but all without avail. On the morning following she was dead: she died about two o'clock, A.M.

Examination, nine hours after death.—On taking off the skin, I observed in those parts where the swellings existed that the cellular tissue was filled with a cinnamon-coloured coagulum; these appearances were presented in the cellular tissue about the shoulders, the neck, the loins, the thighs, and the transverse processes of the ileum: after a short exposure to the air some of these deposits became changed to a black colour. This blackness I found to extend itself into the muscles: it did not stain the muscular tissue uniformly: the black colour existed, as it were, in large blotches, the depth of which into the muscular substance was about an inch, or from that to an inch and a half. The muscles occupying the lumbar region were thickly mottled with these dark stains; they existed also within the substance of the following muscles:—viz. the levator humeri, upon a portion of the antea spinatus, upon the longissimus dorsi, and the muscles situated immediately underneath; upon the gluteus maximimus, tensor vaginæ, and also upon the extensor metacarpi magnus. On dividing the abdominal muscles a layer of the cinnamon-coloured coagulum was exposed; this layer extended the whole length of the abdomen, and its uniform thickness was about half an inch; it also extended itself behind the internal oblique muscles; but, what is worthy of remark, the abdominal muscles themselves were free from the black stains so common to the others. Those muscles and portions of muscles free from stains were so pale in colour and soft in texture as to resemble veal more than horse-flesh.

Abdominal Viscera.—The intestines were healthy to all appearance, but very pale in colour; the lacteals were distended with chyle; the stomach was filled with portions of hay and mash in a half-digested state; the internal surface was healthy, but pale; the liver was also of a pale colour, soft in its structure, and when broken

up, which it readily could be with the finger, it presented the granular character so commonly seen in softened livers: the spleen was very small, and almost destitute of blood.

Heart and large Vessels, &c.—On exposing the pericardium, I found it and a portion of the left lung to be very closely adherent to one another; the lung, in fact, adhered to both the pericardium and to the chest; the adhesion was effected through the medium of the cinnamon-coloured coagulum. The external surface of the pericardium was smooth, and free from lymphy deposit; the pericardium contained about twelve ounces of serous deposit. The heart itself was firm in its structure, but very pale in colour: the surface of the left ventricle exhibited three small dashes, as it were, of a deep red colour, which appeared to be deposited between the lining membrane of the ventricle and the muscular substance of the organ. All the valves of the heart were healthy, as also were the large vessels in connexion with it. The heart, when divested of its fat and large vessels, weighed exactly seven pounds four ounces avoirdupois. That portion of the left lung adherent to the chest and pericardium was indurated, and contained, in addition, a cavity which was filled with a cheesy-looking matter; the pleura, where the lung was adherent, was rough and thickened, from the existence of lymphy deposits. The lungs, as a whole, were far from being healthy; the colour of their substance was bad; and great quantities of serous liquor followed every cut of the knife through their substance. The trachea contained a deal of frothy fluid; its mucous membrane was of a dirty white hue, and softened throughout: the colon and state of the larynx were much the same.

Brain, &c.—The brain I also examined, and found it of moderate firmness and clear in colour; but it appeared as free from blood as though the organ had been washed for my inspection. The spinal cord I did not examine.

Coagulum.—I tested the cinnamon-coloured deposit both with nitric acid and by heating the substance to boiling in a test tube; when I found the whole to consist of serum richly loaded with albumen. This serous substance existed in great abundance, not only where I have stated, but also in the cellular tissue between all the muscles of animal life which I examined.

Case III.

April 19th, 1847.—I was requested, about nine o'clock A.M., to attend upon a mare, the property of Messrs. Sharpe and Welsh, railway contractors, in this neighbourhood.

History.—The mare in question is of a grey colour, six years of age, and of the light draught breed. About ten days ago I was

called to treat her for a severe attack of catarrhal influenza; she had cough, was feverish, off her food, had a copious discharge from both nostrils, and considerable tumefaction in the submaxillary space, attended with soreness of throat. A blister was applied to the tumefaction, and the common fever-ball was administered, which, together with mashes and boiled corn, formed the entire of the treatment: the submaxillary tumour, however, neither subsided nor came to a head, though in other respects she improved. This morning she was found to be worse, and I was again called to the animal.

Present State.

1. Pulse 65, and respirations 16 per minute.
2. A bulbous kind of enlargement has suddenly manifested itself over nearly the whole of the skin; this peculiarity is most visible, however, in front; and upon the superior region of both fore arms, about the sides of the neck, the shoulders, along the back, on the sides of the abdomen, under the breast, and upon the thighs.
3. These bulbous enlargements are hot, and somewhat tender when pressed upon.
4. The hair at these parts is elevated, which gives to the surface of the skin a blotchy appearance.
5. If the hair is turned backwards at these places, a redness is clearly visible upon the skin underneath.
6. The hind limbs are also considerably swollen, but these swellings are of a more even or regular character.
7. The animal coughs occasionally; the cough is loud, but moist in its character.
8. The soreness of the throat is severe; the animal, in fact, can scarcely swallow water.
9. A large tumour fills the submaxillary space, which tumour is hard, hot, and painful.
10. The respiration is a little rough, which roughness is principally confined to the larynx.
11. A thickish kind of saliva flows occasionally from the mouth; the mouth itself is hot.
12. The mucous membrane of both nostrils is covered with scarlet spots; these spots vary in size from that of a fourpenny piece to a mere speck.
13. The animal has not dunged nor urinated for some time, to all appearance—the dung is dry-looking, and resembles wax balls.

Treatment.—A large bran poultice to be applied to the tumour immediately, and to be repeated at night. The diet to consist of boiled corn, bran, &c. Gave the following in a draught:—

℞ Aloes Barb..... 3vj
Antim. tart..... 3j
Potass. nitratis. 3ij
Belladonnæ tinct..... 3ij
Aquæ .... ℥viij.

The following to be given in a draught, at eight o'clock in the evening:

℞ Antim. Tart. 3j
Potass. nitratis. 3j
Camphor 3j
Belladonnæ tinct. 3ij
Aquæ .... ℥vj.

20*th*, *Ten o'clock*, A.M.—Somewhat improved; pulse 58, and respirations 15 per minute: the medicine is operating very gently. Throat not so sore; tumour in the submaxillary space much the same as yesterday; cough not so frequent; appetite bad. To be without medicine until the purging has in part subsided.

23*d*.—Since the 20th the animal has continued gradually to improve: to-day the pulse is 46, and the respirations are normal. The tumour occupying the submaxillary space I opened yesterday; to-day it continues to discharge very freely. The hind extremities still remain very much swollen. On the right hind limb, a little below the patella joint, and running in a transverse direction, is a swelling presenting the appearance as though caused by a severe stroke of a very heavy whip. The bulbous tumours on the back and the sides are somewhat larger than on the 19th, but they are neither so hot nor so tender; a large bulbous mass has also manifested itself on the front of the lower portion of the nasal bones. Deglutition is now performed very well; appetite greatly improved, and the cough is heard but seldom. To have the following in a drench:—

℞ Aloes Barb..... .... 3j
Camphor..... 3j
Potass. nitratis ..... 3ij.

25*th*.—Greatly improved, the bulbous masses which existed upon the skin have nearly all disappeared. The scarlet spots on the nasal membrane have now become paler in colour, and intermixed with a faint yellow. Discharge from the submaxillary space still continues copious. To continue the mash diet, and the animal to be exercised two or three times a-day, for fifteen or twenty minutes each time.

29*th*.—To-day the animal was put to work for the first time since the disease commenced. The surface of the skin is nearly free from any abnormal appearance; the scarlet spots upon the nasal membrane have entirely disappeared; appetite good; has not been

heard to cough for the last two days. Discharge from the submaxillary tumour still continues, but the quantity of purulent matter has abated greatly. Discharged, cured.

Case IV.

April 26th, 1847.—I was requested, about nine o'clock, A.M., to attend upon a horse, the property of Messrs. Carver and Co., carriers, in this town.

History, &c.—The horse I am called to attend upon is now eight years of age; of a black colour, of the draught breed, and stands sixteen hands in height. He has been the property of Messrs. Carver and Co. during the last two years. His labour is that of taking goods to and from the warehouse daily to and from various parts of the town. He is a horse of tender constitution; labour, even of moderate severity, will sometimes take away his appetite. Once or twice he has suffered from colic, and frequently from catarrh. At the time the horse came into the hands of Messrs. Carver, he was affected with a chronic cough, which cough is always accompanied with a violent kind of sneezing: latterly, this cough has become more severe indeed; sometimes this *compound of sneeze and cough* will continue for twenty minutes at a time: the cough is hard, loud, and dry-sounding. During the last three days the horse has not performed his work with that degree of ease which is customary to him. The driver informs me that he has walked stiffly, that his cough has been more severe, and that he was greatly out of spirits and impaired in his appetite.

Present State.

1. Pulse 66, and respirations 18 per minute.
2. The respiratory murmur is normal, apparently, throughout the chest on both sides.
3. When the horse is made to walk, he is evidently in pain; he moves stiffly, particularly the hind limbs.
4. The hind limbs, from their junction with the body down to the hock joints, are greatly swollen: this swelling extends all round the limb inwardly and outwardly, while below the joints the limbs are of their usual size.
5. The fore limbs are also considerably swollen; the swelling upon them is situated upon the outer surface of the fore arms: it is bulbous-looking, presents an irregular surface, and terminates abruptly.
6. A large circumscribed swelling exists under the abdomen; all the swellings are hard, hot, and tender; pit but little if pressed

upon; and in those parts free from hair, as between the hind limbs, the skin presents a glistening aspect.

7. The mucous membrane of the right nostril has upon it a scarlet spot of about the size of a shilling; the left nostril exhibits a number of scarlet spots, which are smaller in size and of a brighter colour.

8. The appetite is greatly impaired; the dung is dry-looking; and the urine is thick and scanty.

Treatment, &c.—The animal to be comfortably clothed with woollen rugs; his diet to consist of boiled oats or barley, combined with bran; to have also linseed gruel or chilled water to drink. Gave the following in a drench:—

℞	Aloes Barb.	ʒvj
	Camphor.....	ʒj
	Antim. tart.	ʒj
	Digitalis	ʒj
	Aquæ	ʒvij.

27*th.*—Much the same in every respect. Pulse 56, and respirations 13 per minute. The physic has not yet begun to purge. In the morning I gave the animal acetate of ammonia ʒij in aquæ ʒiv; and in the evening I repeated the medicine, in combination with spts. of nitre ʒj.

28*th.*—The swellings have increased in size and extent of surface; those on the fore limbs are more than double the size they were yesterday, and they everywhere terminate in an abrupt manner; but they are neither so hot, so hard, nor so tender when pressed upon. The mucous membrane of the nostrils in the early part of the day exhibited an increase of the scarlet spots, both with respect to their number and size; while in the evening a still further change had manifested itself. The spots had all apparently merged into one, and from a bright scarlet they had passed into a purple hue. Every time the animal breathes a loud snuffling sound is heard from the nostrils. The medicine is operating in a very mild manner. Pulse 56, and respirations 13 per minute. To continue the use of the acetate of ammonia in combination with spts. of nitre.

29*th.*—This morning the lips and the lower part of the head began to swell; and at night the swelling had so increased, that the head presented a monstrous aspect. The swelling is hard—in fact, it is stone-like; it is hot and tender, and does not pit from pressure. A copious discharge, consisting of blood and mucus intermixed, issues from both nostrils; the breathing is snuffling. A number of dull red-coloured spots have appeared on the mucous membrane of the mouth. The horse moves about his box with greater freedom than he did yesterday; and the appetite is im-

proved. The pulse has varied from 60 to 66 per minute; the respiration much the same as yesterday. In the morning I gave the following in a drench, which was repeated in the evening:—

℞ Camphor ..... ʒj
Spts. nitre..... ..... ʒij
Acetate of ammonia..... ʒij
Aquæ ..... ʒvj

30*th*.—To-day a constant dribbling of saliva has been going on from the mouth of the animal: the swellings in various parts of the body, head, limbs, &c., are much of the same size and extent as yesterday; they are, however, less tender, softer, and those parts of the skin denuded of hair have lost that glistening aspect. He walks about his box more than he did, eats better, and the snuffle in the breathing is gone. A thick purulent discharge issues from both nostrils. The pulse has varied from 56 to 60 per minute. On applying my ear to the chest, I am enabled, for the first time since the disease set in, to detect an abnormal sound from the lungs: to-day I can detect a soft mucous râle, which is present throughout both lungs, but the air is not otherwise interrupted. Medicine the same as yesterday.

May 1*st*.—To-day various changes have taken place: the swellings on the extremities have, in a great measure, rapidly disappeared: to speak within bounds, the limbs are not half the size they were. About ten o'clock in the forenoon the animal laid him down for the first time since he became ill; he lay for about four hours, during which time he evidently suffered from abdominal pain of a subacute nature. The eye looks dim and glassy; the nose is occasionally brought to the side, and the side is regarded with a wistful look: the nose is held in this position for five minutes at a time; the head is then turned slowly away, and allowed to fall heavily upon the straw. Occasionally he struggles and attempts to roll over, but does not succeed: he refuses every kind of food and drink; he grinds his teeth. The pulse has varied from 60 to 66 per minute. Mucous râle in the bronchi much the same as yesterday, and, what is worthy of remark, the animal has never been heard to cough since the present disease set in. I have been very desirous from the first to examine his urine, but was unable to do so until to-day, when a bottle of it was handed to me for that purpose. It is thick, opaque, and gummy, and resembles dirty linseed oil; its specific gravity is 1·60, and, when shook, a dense froth is formed upon its surface*. On pouring some into a glass

* I am not positive respecting what this urine contained; I have, therefore, given the whole of what I have recorded respecting it, so that future examinations of other specimens which may present the same appearances may clearly decide the question.

vessel, and adding a few drops of nitric acid, the semi-opaque urine at once became clear upon its upper surface, while towards the bottom of the test-tube the liquid was of a dull brown-green kind of colour: a slight effervescence also took place, which appeared to give rise to a number of very minute silvery-looking specks, which specks adhered to the sides of the tube: in a short time these specks conglomerated into globules; and in the course of a few hours these globules subsided to the bottom of the vessel *en mass*. The morning following, this substance, which had fallen to the bottom, was floating on the top of the liquor, and it closely resembled recently made wood-ashes; minute flaky deposits were also at the bottom of the tube, which flaky masses I judged to be albumen. When the horse was first seized with abdominal pain, medicine was given to relieve it; but whether it gave any relief, or prevented the beast from getting worse, I am not prepared to say.

2*d*.—To-day the pulse has continued pretty regular, beating at 66 per minute. The breathing is attended with a loud harsh grating noise, which noise appears to come from the top of the trachea, or from the larynx. A discharge of bloody serum issues again from the left nostril. About eleven o'clock in the forenoon the left eyelid began to swell, and in less than an hour the swelling was larger than my closed hand. The right eye looks dull: bloody serum is discharged drop by drop from the inner canthus of both eyes. The mucous membrane of the eyes is covered with a bloody exudation. The sheath has also begun to swell very rapidly, and by four o'clock in the afternoon it resembled an immense bag. All abdominal pain ceased about ten o'clock last evening: he has dunged, and the fæcal matter is covered with a coating of blood. He refuses all kinds of food, but has drunk freely of chilled water; does not appear to have urinated for a considerable time. From this time I abstained from giving any more medicine; I deemed it altogether useless.

3*d*.—The pulse has varied to-day from 76 to 84; the harsh tracheal sound which existed yesterday is entirely gone. I can detect an interruption to the respiratory murmur when I place my ear immediately behind the superior part of the left scapula: here the sound suddenly ceases, and in a moment afterwards is heard again. The murmur throughout the right side of the chest is perfectly clear. Large swellings have manifested themselves upon both shoulders and down the course of the scapula, while the swelling over the left eye has disappeared, and the eyes are free from any serous effusion; the dung is also free from blood. No appetite; altogether he appears considerably emaciated. In the evening, about nine o'clock, I first detected a peculiar change in

the pulse, and the breathing also became changed: the pulse was wiry or thready, irregular and jerking, and the ribs began to heave violently. In the morning he was found dead.

Examination: Trunk, &c.—The body, when divested of its skin, presented a very strange appearance. The substance of the lips and the lower region of the head was filled with a bloody deposit: the same kind of deposit was present under the breast, down and over the whole of the fore limbs to the very hoofs; along the under and lateral parts of the abdomen; throughout the substance of the sheath; *over* and *under* the faschia of the hind limbs, down to the very hoofs of them also. Surrounding the sheath, and reaching to where the hind legs join the trunk, was an immense deposit of black carbonaceous matter and coagulated serum, which deposit was more than four inches in thickness: in short, on every part of the body where cellular tissue abounded, these dark bloody deposits were also found.

Muscular System.—The gastrocnemii muscles of both limbs were stained throughout of a dark brown colour; the same also with respect to the psoæ muscles: this dark colour did not exist in patches, but the muscles appeared as though they had been steeped for several days in a dark brown liquid. The tissue of these muscles was very soft, and tore with the slightest force: every other muscle throughout the entire body was free from spot or stain—a fact, which, I think, somewhat remarkable; they were pale in colour, however, and soft in texture.

Digestive Organs.—On opening the abdominal cavity, about five quarts of dirty yellow-coloured fluid were liberated. The peritoneum was extensively diseased; it presented various shades of colour, from a light brown to a dark black kind of green: its surface was rough and granular-looking; no lymph or purulent matter was present. The pyloric extremity of the stomach was invested with a coating of black green colour; and, on exposing its internal surface, I found its mucous membrane to present a dirty pea-green colour; while between the mucous membrane and the muscular tunic of the organ was a layer, three-eighths of an inch in thickness, of the bloody coagulum, such as I have described as existent upon the abdominal walls. This layer extended itself for eight or ten inches along and between the tissues of the duodenum, which gut was so much softened that its tissues separated in pieces, more as wet paper than any thing else I could compare them with. Patches of green were scattered here and there along the whole length of the small intestines. The greater portion of the cæcum was gangrenous, and between its tunics was also a coagulum more than one inch in thickness. The mesentery was covered with dark

patches of a lighter shade of green; and at the junction of the ileum with the cæcum was a large deposit of carbonaceous matter.

Urinary Organs.—The kidneys were pale in colour, but firm in their structure; the ureters were healthy. The mucous membrane of the bladder was covered with dark red and scarlet spots. The urethra was normal.

Respiratory Organs.—The Schneiderian membrane was of one uniform dull red colour; the redness extended to the larynx. The mucous membrane of the larynx presented several patches of a green colour: the same with respect to the mucous membrane of the trachea, in which were intermixed blood spots. The bronchial tubes were all gangrenous, at least all that I examined. A large portion of the left lung, on being cut into, I found was scirrhous; other portions were softened. The lungs throughout did not crepitate, and a frothy serum exuded on the withdrawal of the knife. The right lung was in a very similar state, though not so extensively diseased. The pleura pulmonalis had a few red spots upon it. The pleura costalis was normal throughout.

Organs of Circulation.—The heart was sound in its structure, but pale in colour: the thickest portion of the walls of the left ventricle was one inch and three quarters, and that of the right ventricle was a little more than three quarters of an inch. The weight of the heart, when divested of its fat and large vessels, was exactly seven pounds twelve ounces avoirdupois. The large bloodvessels were all healthy.

Brain, &c.—The brain and its membranes were firm in texture, but bloodless: the spinal cord the same. The large nerves I did not examine.

Skin.—The skin, in those places covering the swellings, appeared thickened, and it readily separated into layers; and between these layers was a thin bloody serum, which copiously exuded when I squeezed the skin. The skin was not broken through in any part.

Case V.

April 4th, 1849.—I was requested, about four o'clock, P.M., to attend upon a mare, the property of Messrs. J. R. & Co., manufacturers, in this town.

History, &c.—The mare in question is of a dark brown colour, is half bred, stands exactly sixteen hands high, and is now six years of age. She has been the property of the firm two years less about four weeks. She was bred by a farmer who resides about eight miles from Huddersfield; and, from having known her for some

time, I can speak very accurately as to her course during the last two years or more. During the latter part of April 1847, I attended this animal for an attack of gripes (which was prior to her being bought by the present owners); and the latter part of the month following (after the present owners had bought her) I attended her for a second attack; in the beginning of October, a third; on the 15th of February 1848, a fourth; on the 20th of May, a fifth; and on the 30th of August, the same year, a sixth. On the 24th of March 1849 she was attacked with pleuritis, which disease lasted from the above date until the 30th: this attack was not a severe one, and it appeared to have confined itself entirely to the left side. In addition to what I have stated, she has been, for the last two years or nearly so, affected with a cough; she is also a most enormous eater, and yet she is generally thin and hungry-looking. Her labour has never been very severe—generally speaking, it is regular: she is ridden occasionally, and occasionally she is used for harness and carting purposes.

Since recovering from pleuritis she has performed her labour, upon the whole, in a tolerable manner; but the man whose business it is to attend upon her says, that she has never walked with the same freedom and ease with which she did previously; and that, frequently after she had partaken of water, she would turn her nose to her left side, and appear to regard the side with anxiety. Yesterday the animal remained all day in the stable; and this morning, when the man came to her as usual, he was informed by a person who resides over the stable, that the mare, during the night, had made a great deal of noise with her feet against the wall. Upon entering the stable, he found the straw a good deal scattered about, but she appeared well, and she ate her food with good zest, so that no further notice was taken of the matter at the time. She has also remained in the stable during the whole of to-day, and about an hour ago she was first observed to be in a very singular condition: her hind limbs were found to be considerably swollen, and she appeared to be very weak and tottering upon them; "she began to stagger, and her joints to double under her." At this stage of the proceedings I was requested to attend.

Present State.

1. Pulse 84, and respirations 24 per minute.
2. The animal is laid upon her right side, and her limbs are stretched out; they are of a normal temperature.
3. The eyes are dim and glassy-looking.
4. The mucous membrane of the nose is flushed, but of one general tone of colour.

5. The membrane of the mouth is hot, and the tongue is soapy.

6. The surface of the animal's body presents here and there patches of perspiration.

7. Occasionally she raises her head, brings her nose close to her left side, looks at the side anxiously; then slowly takes away her head, and lets it fall heavily upon the straw.

8. The hind limbs are considerably swollen, particularly around the hock joints; the swollen parts are hard, hot, and somewhat tender when pressed upon.

9. She struggles violently, and attempts to rise occasionally; but the hind limbs are powerless.

Treatment, &c.—I had recourse to the common colic draught; had the spine and back well fomented with hot water, and afterwards rubbed with a strong stimulating liniment: she was then well covered with rugs, and for a long time afterwards she lay perfectly at ease. About twelve o'clock she was in such a comfortable state, that it was deemed safe to leave her alone, which accordingly was done; but the man having the care of her, upon entering the stable about six o'clock the following morning, discovered that she was dead. The straw was not much disturbed, and, from the manner in which she was laid, she appeared to have died very quietly.

Examination: Trunk, &c.—I did not observe any thing peculiar on removing the skin, until I came to the hind limbs, when the following conditions presented themselves. Cellular tissue around the hock joints filled with bloody deposits: these deposits varied in colour; the darkest portions were almost black—the lighter portions were of the colour of cinnamon: the cellular tissue around the patella joints was in a similar state.

Respiratory Organs.—The nasal passages, the larynx, the trachea, and the bronchial tubes, were all healthy. The left lung was congested: the pleura costalis of the right side was perfectly healthy: the pleura costalis of the left side along the middle region of the chest was strongly injected with a vast number of minute red vessels: the injected portion extended the whole length of the chest, and varied in depth from three to six inches: along this injected region, the left lung adhered by a thin coating of serum.

Organs of Circulation—The large vessels, the arteries, and the veins in immediate connexion with the heart, were all healthy. The left ventricle of the heart contained a number of purple-coloured spots; these spots were the most numerous around the muscular pillar within the cavity: both ventricles contained clots of fibrin intermixed with tar-like masses of semi-coagulated blood. The heart, when divested of all fat and of its large vessels, weighed exactly seven pounds avoirdupois.

Urinary Organs.—The bladder, ureters, kidneys, and urethra, were all perfectly healthy. The kidneys were remarkably firm and sound.

The Brain was better in colour, and firmer, than I anticipated; the spinal cord was also good in these respects. The nerves I did not particularly examine.

Digestive Organs.—The stomach contained a large quantity of food in a forward state of digestion; every part of the organ was healthy. The small intestines were moderately filled with a brownish-coloured substance of about the consistence of thick gruel: the mucous membrane of these intestines was of one uniform dull red colour from one extremity to the other. The large bowels were moderately full, and healthy throughout. The liver was very sound, and, when divested from all extraneous structures, weighed exactly fourteen pounds six ounces.

Muscular System.—The muscles of animal life were all more or less softened. On exposing the psoæ muscles, I was surprised at their great bulk; they resembled two bolsters more than any thing else I can compare them to. The cellular tissue spread over their inferior surface was filled with yellow coagulum, while the muscular tissue itself was literally black, and so soft that their fibres separated and tore into shreds, which shreds, when squeezed dry and worked between the fingers, passed into a kind of powdery pulp. The whole of the muscles on both sides of the spine were in the same softened state; similar black stains were present also within the iliacus muscle of the right side, in the sacro lumbalis muscles, transversalis abdominis of both sides, gracilis, sartorius, and the pectineus:—those muscles on the right side were the worst; I mean these last named ones. The size of the stains varied from a mere spot to that of a five-shilling piece, or larger. The cellular tissue of the fore limbs, externally, contained the yellow coagulum here and there, and the muscles of those parts exhibited a few stains also, but such stains were neither large nor numerous.

Remarks.—Purpura hæmorrhagica is a disease which hitherto is without place in any systematic work upon veterinary medicine. In a book entitled "Posthumous Extracts from the Veterinary Records of the late John Field," a volume which is entirely filled with veterinary cases, and a volume which every earnest veterinarian should have in his possession, the reader will find records of seven cases of this singular disease; the whole of which agree in their general features with those which are furnished in the present Contribution. In THE VETERINARIAN for 1844, Mr. Percivall treats upon this malady; but he, if I may be allowed the expression, mixes it up, as it were, with remarks upon a disease of

a totally different nature: close observation, however, I have no doubt, will enable this very talented gentlemen to discover its true nature, and place it in that position to which it justly belongs. Again, in THE VETERINARIAN for 1845, some well-marked cases are given by my friend and excellent practitioner, Mr. James Moore, V.S., of Manchester; which, together with two other papers in the *Veterinary Record* for 1848, one by Mr. Mannington, V.S., of Brighton, and the other by Mr. Boag, V.S., of Kelso, are all with which I am acquainted, or remember to have seen furnished to the readers of THE VETERINARIAN and the *Record* during the last ten years. In the remarks, therefore, which I have to offer respecting Purpura, I propose, in the first place, to consider the nature of the disease; secondly, its causes, predisposing and exciting; thirdly, its varieties; fourthly, its complications; fifthly, its prognosis; and, sixthly, its duration.

Nature of Purpura.—The pathological definition which Dr. Copland gives of Purpura, in part 13 of his Dictionary of Practical Medicine, is as follows:—"*Depressed organic nervous energy, giving rise to impaired tone of the capillaries, especially of the mucous and cutaneous surfaces, and to diminished crasis of the blood, thereby permitting the passive exudation of this fluid.*" John Field defines it to be, 1st, "an increased tenuity of the blood; 2d, dilatation of the mouths of the capillaries, admitting natural blood to pass through them; 3d, tenderness of the coats of the vessels, giving way from the ordinary impetus of the blood; 4th, increased impetus, rupturing healthy vessels; 5th, obstruction in the capillaries; 6th, two or more of these causes combined. Still, the universality of the disease does not allow," he further remarks, "of the proper explanation of the phenomena from either of the above causes, and the more rational mode of explaining it seems that which refers to an alteration in the condition and vital properties of the blood." I cannot say, however, that I am satisfied with either of the above definitions. When applied with reference to this disease in the horse, they appear to me to want comprehensiveness; particularly the latter. To define any thing very accurately, and at the same time comprehensively, especially when the subject of definition is in itself intricate, is, I know, a task of considerable difficulty; in short, to fully define a disease is a matter which can only be done by telling all about it; and so far as any thing remains untold which can be told respecting it, so far is the definition incomplete.

Purpura, says Dr. Copland, is a disease "intimately related to the *hæmorrhages* on the one hand, and to *scurvy* on the other; being intermediate between them, or forming the link which connects them; certain cases hardly admitting of any distinction be-

tween them and hæmorrhage from mucous surfaces, and others being almost identical with scurvy. Purpura usually appears independently of fever, with a number of reddish, purplish, or livid spots, of various sizes, on the cutaneous surface, these spots being usually termed PETECHIÆ, *vibices*, and ECCHYMOSES, according to their sizes; and, in the severer cases, it is attended by hæmorrhage from one or more surfaces, but chiefly from the mucous surfaces. The spots or patches are rarely elevated above the surrounding level of the skin, are not attended by any uneasy sensation, and, when examined closely, they are found to consist of exudations of blood between the layers of the dermis, or in the subjacent cellular tissue, or rather serum coloured by the red globules variously altered. They cannot be viewed as an eruption or rash, but are, strictly, a passive hæmorrhage of the vascular tissue of the skin."

According to Dr. Copland, purpura in the human subject "usually appears independent of fever;" a fact which is not borne out with reference to this disease in the horse, at least so far as my own experience has gone. In every case which I have recorded, more or less fever was present when the malady became recognized; indeed I can scarcely suppose that such an extensive morbid change could take place within the system without fever manifesting itself simultaneously: nevertheless, I am prepared to admit that the fever might be so slight (as in Case V, for instance) as not to excite the attention of non-professional observers. In the cases given by my friend Mr. Moore, he considers the disease to be erysipelas, from the fact, no doubt, of its spreading so rapidly: in this view of the matter Mr. Moore is mistaken. Erysipelas, as its name implies, is an inflammation of a spreading character, and one which confines itself chiefly to the skin and to its immediate subtextures; but purpura is not a disease of the skin at all, and, so far from its being essentially an inflammatory one, it frequently occurs in states of the system of decidedly an opposite nature to that which is described as such. It appears to me, in short, to be altogether peculiar in its nature; the most remarkable feature of it consisting in the strange morbidly debilitated state of the entire circulatory system, thereby, as Dr. Copland expresses it, "*permitting the passive exudation*" *of the blood into the mucous, muscular, serous, and cellular tissues of the body.*

Predisposing and exciting Causes of Purpura. — The most prolific predisposing causes of purpura are those which morbidly debilitate the vital energies; indeed, this may be said of all diseases; but the kind of disease which may result will undoubtedly depend either upon some peculiar predisposition in the organism

itself, or upon a favourably exciting cause; or upon the two acting in combination. Setting aside, however, considerations of so general a character, I may enumerate as predisposing to purpura, in particular, such affections as chronic cough; or rather, that local or general morbid state of the organism, or part of the organism, which is productive of chronic cough; secondly, that state of the vital energies denominated as "*naturally weak;*" thirdly, chronic disease of the fauces; fourthly, that morbid tendency within the system, which, from the action of very slight exciting causes, admits of the frequent development of colic, or other forms of morbid irritation of the bowels; fifthly, the keeping of horses in damp, unclean, and ill ventilated stables; and, lastly, two or more of these causes acting in combination. Cases II, IV, and V, are examples as to the predisposing nature of chronic cough, colic, and of the naturally weak constitution. With respect, again, to chronic disease of the fauces, I may mention that I once attended upon a draught horse affected with purpura, which for a long time previously had had disease of the fauces of a very obscure nature; the animal, however, ultimately recovered after more than six months' duration of the disease purpura.

Exciting Causes.—As immediate or exciting causes I may particularise catarrhal or epidemic diseases, such as laryngitis, scarlet fever, and exposure to wet and cold during the convalescent stage of any of the above diseases.

Varieties of Purpura.—Purpura, with reference to its manifestation in the human being, is divided, says Hooper, "into the five following species:—viz. *purpura simplex, purpura hæmorrhagica, purpura urticans, purpura senilis,* and *purpura contagiosa.*" The second variety, however, or *purpura hæmorrhagica,* is the one which the veterinarian has usually to deal with; and it is manifested, as John Field very truly observes, in the acute and subacute conditions. Of the acute, Case IV, and of the subacute, Case V, are examples of each condition respectively. The peculiar manner in which this disease invaded the animal in Case V is worthy of remark; the real disease was masked throughout. I regarded the case, at its onset, as being one of irritation of the bowels, and treated it accordingly; while the loss of motor power I considered as an anomaly which time might enable me to unravel, and which it certainly did, but not in the manner I anticipated. The facts made known by the post-mortem prove, in my opinion, that the disease must have been going on for some time; most probably the purpura supervened upon the disappearance of the pleuritis. The loss of the motor power of the hind limbs was clearly accounted for from the state of the psoæ muscles; while

the irritation which the loss of such power occasioned upon the animal's temper induced the struggling and other symptoms which I mistook for colic.

Complications of Purpura.—The complications of purpura are both numerous and important. The disease seldom occurs but in association with other maladies, and generally with scarlet fever. In Case II we find the disease closely associated with disease of the lungs, with chronic cough, and with disease of the heart; in Case IV with disease of the lungs, with chronic cough, with scarlet fever, and also with intestinal or peritoneal disease; while in Case V it was simply in association with chronic cough. In addition to the associations named as being present in Cases II, IV, and V, I may allude to the bad or unhealthy state of the system in every one of these animals for a long time prior to the manifestation of purpura, a state of the system which, with truth, may be denominated CACHECTIC. Now purpura in connexion with this state of the system, according to Dr. Copland, "is the most frequent" in the human being; "indeed," he says, "purpura is eminently a *cachectic malady*, proceeding from causes which affect the vital tone and condition of the tissues, and consisting of changes not only in the condition of the textures, but also in the state of the blood. This cachectic habit of body both precedes the purpura and attends it, and favours the occurrence of hæmorrhage, which so frequently takes place, and is *one of the most important complications of the malady.* The evidence of cachexia is, however, not limited to the supervention of hæmorrhage, but is supported by the appearance of the countenance; of the cutaneous surface, even before the purpura appears; by the states of several assimilating and excreting functions; and by the condition of the whole frame." The natural energies, in every animal numbered as above, were in a morbidly depressed state, and had been, as I have just stated, for a considerable period previously. The subject of Case II was liable to colic, to catarrhs, coughs, and to swellings of the hind limbs. The subject of Case IV was naturally of a tender constitution, suffered occasionally from colic, and had chronic cough of a most violent nature arising from long existent disease of the lungs. The subject of Case V was also subject to chronic cough, to frequent and violent attacks of colic, was of a weak constitution, a voracious feeder, and a bad thriver; facts which, when viewed in relation to purpura with reference to its nature and mode of development, become highly significant both to veterinary pathology and veterinary jurisprudence.

Diagnosis of Purpura.—Purpura, I think, is a disease which admits of ready detection, even by the inexperienced practitioner: the suddenness of its attack in the generality of cases, its general

or diffusive character, or its rapid appearance in first one part of the organism and then another; together with its frequent complication with scarlet fever, and the stiffness which is exhibited by the animal when made to move; are all states and symptoms so indicative of this malady as scarcely to allow of a mistake, by the careful observer, as to its nature. The only disease with which it might be confounded is that of LYMPHATITIS*; a careful attention, however, to a few prominent facts in relation with this latter disease, will prevent even this. In very acute cases of lymphatitis, one of the limbs (generally a hind one) suddenly begins to inflame and swell, and this swelling, at times, will reach to an enormous size; but the disease seldom, or perhaps never, attacks more than one limb at a time; and I may add, that it is seldom or never manifested in association with any other acute disease.

Duration of Purpura.—The duration of this malady is extremely uncertain; it may subside, and the animal become convalescent, in the course of four or five days, or even earlier: or it may extend, as it did in one case which I had, to as many months. Its duration will greatly depend upon the previous state of the animal's health, or upon the state of the vital energies at the time of being attacked; upon the treatment of the disease at its commencement, and upon its complications. John Field says, its duration is "from three to seven days, in fatal cases: if the horse survive that period, though the circumstance is favourable, it may recur, and prove fatal, by deposits in vital organs, or by gradually exhausting the vital powers." The duration of the disease in Case II was seventeen days; in Case IV, eight or nine days; and in Case V, supposing the disease to have immediately supervened upon the disappearance of the pleuritis, its duration would be five days. From the fact of the proneness, as it were, of the disease to deviate from its original course, to suddenly attack internal viscera, and deposit large quantities of blood amongst the tissues constituting such viscera, its duration in consequence, I again repeat, is rendered extremely uncertain. This change in the course of the disease is attended with one or two peculiarities, which are worthy of especial note. The patient, to all appearance, begins to improve; the limbs suddenly become less in size (as in Case IV for instance); the movements are performed with more freedom; and the countenance becomes more lively. Soon afterwards, symptoms of abdominal irritation of a subacute character are manifested, which symptoms generally continue from six to twelve and even twenty-four hours; at the end of which time the animal usually becomes quiet, and the limbs again begin to fill as

* A disease which I have described, and shewn the nature of, in the first of these Contributions. See Contribution I, in THE VETERINARIAN for 1849.

before. From this period it is seldom that the patient really improves, although symptoms seemingly to that effect occasionally appear, but only, as it were, to deceive the perhaps anxious practitioner. The animal gradually passes from a bad to a worse state, until, at last, it dies an exhausted, emaciated, and sometimes loathsome, object.

Prognosis of Purpura.—In the very scanty, but very excellent, observations* written by John Field upon this disease, in speaking of its prognosis he says, it "must be guarded, and can only be favourable when the fever has abated; when the swellings are confined to the limbs, not attended with difficulty in motion; when symptoms of internal mischief are absent; when there is plentiful diuresis: but if the urine be scanty, ropy, voided in small quantities; if there be much painful distention of the thighs from effusion beneath the faschia; if there be much extravasation about the nose and head, and effusion beneath Schneider's membrane, &c., the prognosis is unfavourable, and, moreover, if symptoms of internal disease exist."

Having thus briefly considered purpura with respect to its nature, its predisposing and exciting causes, its varieties, complications, diagnosis, duration and prognosis of the disease, we may now, as briefly, enter upon the consideration of scarlet fever. Scarlet fever is another disease which is without place, and almost without mention, in our systematic treatises on veterinary medicine: the only writer who alludes to it is Mr. Percivall, in whose work, vol. ii, page 27, the reader will find some observations respecting it. From what Mr. Percivall states, it appears that its nature was first recognised by himself; and that he called the attention of the profession to it in a paper which he wrote and published in THE VETERINARIAN so early as the year 1834. From that time to the present, a period of sixteen years, one would naturally expect that our knowledge of this disease would be of a very complete character; but I should greatly question whether, upon the whole, it is much better understood now than what it was then; at any rate, our knowledge of it is very far from what it ought to be, considering the opportunities which the members of the profession at large must have had for investigating it.

Scarlet fever, with reference to the human being, "is, for the convenience of description," says Watson†, "and for the better direction of the treatment," generally by authors considered under three varieties, viz., *scarlatina simplex,* in which there is a florid rash, and little or no affection of the throat; *scarlatina anginosa,* in which both the skin and the throat are decidedly implicated;

* See his "Posthumous Extracts," page 18.

† See Watson's "Lectures on the Principles and Practice of Physic."

scarlatina maligna, in which the stress of the disease falls upon the throat. The epithet *maligna* marks truly the fearful character of this form of the malady. This division, so far as my own experience has hitherto gone, is, upon the whole, very appropriate to this malady in the horse, particularly the varieties denominated simplex and anginosa: the latter variety, in fact, may be said to be a mild form of the scarlatina maligna; for, as Dr. Copland remarks, the anginosa form passes into the maligna by "insensible gradations."

Scarlatina Simplex.—This form of the disease usually appears in association with epidemic catarrh; it seldom, or perhaps never, manifests itself simultaneously with epidemic catarrh, but usually on the third, fourth, and even as late as the sixth day after the commencement of the former. The animal affected with catarrh will, perhaps, be fed and left at the usual hour at night in what may be considered a fair way of recovery; but, on the groom entering the stable on the morning following, the patient may be found affected in a very peculiar manner: the hair about the neck, the fore and hind limbs, will be elevated in a blotchy manner, while the limbs themselves will be found in a swollen condition. The blotchy elevations, generally speaking, are not large, but they are exceedingly characteristic of the malady. If the hand be passed lightly over them, scarcely any corresponding elevations can be felt upon the skin beneath: the mucous membrane of the nose will have upon it a few scarlet spots of variable size; the pulse, in some instances, will be increased in action considerably; while in others, even when the disease appears more severe, not so much. In like manner, the soreness of the throat may also be increased, or it may not. Sometimes the blotchy elevations may be confined to the hind limbs, and the scarlet spots to the membrane of one nostril; while, in other cases, all these symptoms are present, but in such a very mild degree as not to excite the attention of any one but a closely observing practitioner. If at this stage of the disease the animal is judiciously treated, and the stable be dry and comfortable, the whole may pass off in a few days, without any further mischief ensuing; but if the treatment be improper, the stable cold and damp, and the animal otherwise unfavourably circumstanced, it is probable that the disease will become virulent, by either assuming the malignant form, or by passing into purpura, or both; and so endanger the life of the animal.

Scarlatina Anginosa vel Maligna.—This form of the malady may appear either at once in all its virulence, or it may supervene upon the milder states above described. It generally prevails either as an epidemic or as endemic. The patient for some days may have manifested what is usually considered epidemic catarrh, the

symptoms of which may consist of sore throat of an obstinate character, fever, cough, and purulent discharge from the nostrils: suddenly the limbs begin to swell, the swelling presenting either an even surface, or, what is more common, it appears in lumps, which are not only large and numerous, but hard, hot, and painful, attended with blotchy elevations of the skin in other parts of the body. The Schneiderian membrane becomes covered with large scarlet spots, while from the nostrils is discharged bloody serum mixed with thick purulent matter: the soreness of the throat becomes excessive, the cough difficult and suffocative, accompanied with a corresponding difficulty in swallowing. The pulse increases in number, reaching at times 90 or 100 beats per minute, and always of a weak or feeble character. The animal, if made to move, does so with difficulty; the limbs are sore and excessively tender: if left alone he will obstinately stand in one position. As the disease proceeds, or assumes more intensity, large vesicles appear upon the extremities, particularly around the joints; these vesicles burst, and copiously discharge a serous, amber-coloured, corrosive fluid. The appetite disappears, the bowels are constipated, and the urine becomes scanty, and is of a thick yellow or of a brown colour. In the course of twenty or twenty-four hours, or even less, the scarlet spots on the nasal membrane pass into a purple colour, from extreme vascular congestion, and these purple patches slough, and leave a raw surface, from which is secreted an abundance of purulent matter. If the animal goes on favourably, the fever will generally abate (in the milder states) about the fourth or fifth day from the commencement of the very acute stage; while in the more malignant kinds it is seldom that a change for the better occurs before the seventh or eighth day: generally, however, purpura supervenes, and the patient dies exhausted and emaciated. Cases I and III of the present Contribution are clearly cases of this form of the disease. The reader will also find another case of the same character clearly detailed in a paper to which I have previously alluded, written by my friend Mr. Moore, in THE VETERINARIAN for 1845.

Complications.—Scarlet fever in the human subject, according to medical writers, is frequently associated with disease of the kidneys and with disease of the brain; but whether similar associations ever occur in the horse, is a question which, at present, I am unable to answer; further observations, however, will undoubtedly throw much light upon this department of the inquiry, which is much needed, and I especially note the matter as a hint to future observers.

I have seen scarlatina associated with congestion of the lungs, and with asthenic or a typhoid form of pneumonia, and also fre-

quently in association with rheumatism. Purpura hæmorrhagica is also another disease with which the more severe forms of scarlatina are almost always associated. Scarlatina being, as it is, the result of a morbid change in the vital force, which change appears to be one peculiarly favourable to the development of purpura, we can scarcely expect the severer forms of scarlatina to occur without purpura, in some degree or other, manifesting itself. "The complications or predominant affections of vital organs or parts constitute," says Dr. Copland, "the most important topics in the history and pathology of scarlet fever. It may be remarked generally as regards them, that their nature and tendency depend chiefly on the character of the constitutional disturbance; on the states of vital or nervous power, and of vascular action, in connexion with the condition of the blood; and that they may be inflammatory, or actively or passively congested, or either of these associated with so remarkable a loss of vital power and cohesion as to be rapidly followed by disorganization. In all complications occurring in the course of scarlatina or of other specific infectious maladies, the local affections should be viewed as prominent lesions only, the whole frame being more or less infected or poisoned by the animal miasm, rather than as independent morbid conditions requiring a special treatment. However inflammatory or however congestive the complication or prominent disorder may seem in these maladies, it should never be viewed, either pathologically or therapeutically, in the same light as inflammation or congestion occurring primarily or independently of a specific affection. The former has a peculiar character imparted to it by the specific poison, lowering and modifying organic nervous power, and contaminating the fluids; whilst the latter is devoid of these poisonous influences and changes, and of their progressive consequences. Accordingly we find that the same means as are successfully employed to remove inflammation, or congestion or effusion, taking place primarily or independently of a specific infection, would be either quite inefficient, or even injurious, if employed against these, when supervening as complications or prominent disorders in the course of scarlet fever or other infectious maladies. These latter are imbued with the constitutional characters of these diseases, and partake of the type and diathesis which they manifest."

Having thus briefly touched upon the principal features of purpura and scarlatina, two diseases which hitherto have been strangely enough overlooked by veterinary writers of every grade, I might now greatly extend my Contribution by entering upon an exposition of the facts which I have observed with the microscope with reference to the state of the blood in both these affections; but I find that what I have already written so far exceeds the limits

usually allowed to any paper published in this Journal, that, for the present, I must forbear. I forbear also to enter upon the question of treatment, and also upon a number of interesting but minor topics in relation to these important diseases. It appears, according to the date at the head of "a rough outline" of a paper published in the Posthumous Extracts of John Field (a paper from which the reader will recollect I have quoted some portions into the present Contribution), that he wrote his fragmentary remarks in the year 1839, a period now of eleven years, or near upon it; and yet, strange to relate, not a single contribution giving even the most distant approach towards a complete view of the malady has appeared from that time to the present. The profession may flatter itself that it is advancing; for my part, however, I see little or no advancement. Our labours for the last ten years have been little more than a repetition of what has gone before. Our books are things of shreds and patches; the system which is followed in the investigation of disease, in the treatment of disease, and in the reporting of it, is altogether so crude and barbarous, that, for my part, I am thoroughly ashamed of the whole matter. The microscope is altogether unknown to the great body of the profession; the examination of the urine in equine disease is a process which I may say the same of; nay, so little is known upon the matter, that I question if even the average specific gravity of this fluid could be told by one veterinarian in a hundred; and yet it is a field which, if any one would cultivate, an abundant harvest would reward the labourer. Then, again, with respect to the anatomy of the horse, the ox, or the dog, so profoundly silent are the members of the profession upon these heads, that such a branch of science might never have been taught them.

I have heard much noise about a *Charter*, the clamour of which may be compared to the rattling of peas in a dried bladder, or to a storm in a horse-pond; I have also read much which has been said about the "*spirit*" of this Charter. Until I am convinced that it is the best term which can be applied to it, verily the whole is spirit; for no one, I am persuaded, has ever yet discovered the *substance*. It is not Charters that we want, *but it is that quiet spirit of earnestness which characterises the true labourer in science.* We require men who will labour for the advancement of the profession from the pure love of the thing; we want, in fact, a few John Fields, *or men who know what to work at—who know how to work, and who are possessed of the will to do it.*

FOUR CASES OF PUTRID SORE THROAT IN HORSES, TERMINATING FATALLY.

By THOMAS PROCTOR, *V.S., Solihull.*

A HUNTER, a filly, and two colts, the property of H. Chattock, Esq., were seen twice on the 4th of July last, and on each occasion were considered quite right and healthy by the person who had the care of them. Early on the morning of the 5th, Mr. C.'s bailiff came to me to say he had found the filly quite "dead and stiff," and wished me to make an examination of the body, with the view of accounting for the cause of death. I fixed two o'clock P.M. for a post-mortem examination.

While on my round, Mr. Chattock's groom overtook me, and said, "I think, Sir, you had better see the other three horses, as it appears to me all of them are unwell." Accordingly, I dismounted my horse, and accompanied him across two or three fields to the one in which these horses had been pastured for some time. I found the filly lying upon its left side, quite dead, with its throat very much swollen, and a great quantity of white froth issuing from its nostrils. A bay colt, three years old, stood near to the body of the filly, hanging his head down, with his throat enormously swollen, breathing sonorously, breath stinking, appearing languid and dispirited, tongue furred, the membrane of the nose of a dark crimson colour; pulse 110, weak and fluttering. I next examined the mare and the other colt, and found their symptoms very similar to those I have already described, with this difference only, that the mare's pulse was upwards of 90 per minute, while the colt's was but between 60 and 70. I at once recognized the ailment of my patients as being *Malignant* or *Putrid Sore Throat*, which I have ever found extremely fatal. I said to the groom, "Lead the surviving animals home; but remember, in all probability, you only lead them there to die." I then pursued my journey in haste, and returned soon after my two poor patients reached their stables. I bled them, and gave physic; fomented, and afterwards blistered their throats; steamed their heads constantly; and gargled their throats frequently. During the afternoon I watched them narrowly; but in spite of all my efforts the disease progressed every hour. In the evening I saw Mrs. Chattock (her son being from home), when I explained to her the nature of the disease, its fatal character, &c., and advised her to call in another veterinary surgeon to meet me on such desperate cases. I was actuated in doing so by the supposition that Mr. C. might be the better satisfied when he came home.

Mr. Godwin, of Birmingham, was sent for about seven o'clock the same evening; but, he not being at home, Mr. Davy, his assistant, came over about half-past ten o'clock. He examined each case very minutely with myself, and at once considered the case of the colt altogether hopeless; at the same time, he recommended that the operation of tracheotomy be performed. Accordingly, I opened the windpipe, which afforded temporary relief to the poor dying animal. Notwithstanding, however, about half-past twelve o'clock the same night he died.

Early the next morning I met Mr. Godwin and Mr. Davy in consultation on the surviving animals. These gentlemen gave their best attention and consideration to these desperate cases, making such suggestions as they considered would prove beneficial. Mr. Godwin directed his assistant to make a post-mortem examination of the body of the colts which had died on the previous evening. Mr. Davy performed his task admirably well. The body lying upon its right side, Mr. D. first of all removed the left branch of the lower jaw and left cheek, which at once exposed the mouth, palate, tongue, and pharynx; he then laid the larynx and trachea fully open, when the fatal mischief, the cause of death, was brought to view. The root of the tongue was swollen, and in several places ulcerated; the pharynx was highly inflamed, ulcerated, and in a putrid state, emitting a putrid smell, thus accounting for the stinking breath during life, some hours before death, and which rendered it sometimes almost impossible for the attendants to bear. The larynx, as well as three or four inches of the upper part of the trachea, presented inflammatory appearances. The parotid glands were enlarged, as well as all the external parts of the throat. The other viscera were quite healthy.

Returning to the other patients—the mare rapidly grew worse; her throat swelling more and more; pulse rising to 113 per minute; her countenance presenting a distressed and haggard appearance; she often waved her head, and shifted her position, as if enduring intense agony. Then succeeded the most laborious breathing, suffocation, and death on the second day after her first attack.

No post-mortem examination of this case was made.

In the last case, that of the colt four years old, the disease, at first, appeared to assume a milder form, and so continued until the day before he died, when the malignant symptoms came on, and the disease rapidly ran its course. The pulse in this case never exceeded 80 per minute. Perhaps the early attention and opening of the trachea might have retarded its progress; though, in the end, the violence of this case even exceeded the former ones; the

breath having such a putrid smell that it caused sickness and diarrhœa to the two men who attended him.

A post-mortem examination of this case was made in the presence of Mr. Chattock, when the same appearances, in a worse form, presented themselves as in the former case. The inflammation extended to the base of the brain, causing an effusion of the serum there, to the amount of two table-spoonsful.

The following statement, which I received from good authority, will shew that cattle are liable to malignant sore throat. Two starks, the property of a farmer at Wroxall, were found dead, or or nearly so, in a field, on the 12th of July last, affected in their throats. They had been seen by the shepherd some hours previous to their being found dead. The butcher was sent for to dress the carcasses for sale, and the consequence was £20 loss to him. His own horse partook of some grains mixed with some of the blood taken from the beasts. In less than twenty-four hours afterwards he died from swelling of his throat, producing suffocation. A sow and nine pigs likewise ate of the blood and grains: they soon afterwards were seized with throat affection, producing snorous breathing, of which one of them died. The others, after much trouble, eventually recovered.

A son of the butcher, a stout youth fifteen years old, assisted his father to dress the carcasses of the starks. He happened to have a scar on one of his fingers at the time. Soon afterwards he became ill from painful swellings on his hand and face, and up to about a week since he has not been able to attend to his business or even leave his room.

Remarks.—The above cases are those of malignant or putrid sore throat. Both horses and cattle are subject to this form of throat disease; although no mention is made of it, as far as I am aware, in any of our works on the diseases of horses. Even Mr. Percivall appears altogether silent on it in his "*Hippopathology.*" Nevertheless, the fact remains the same, and cases of this description do now and then present themselves, generally appearing as isolated cases. I have met with about a score cases of it during my practice, and, I regret to say, it invariably has proved fatal.

The symptoms of this kind of sore throat differ much from those of ordinary or catarrhal sore throat; the disease being sudden in its attack, and rapidly running its course: the patient seldom surviving the third day. The whole system from the first greatly spmpathizes in this affection, as is shewn by the rapid rising of the pulse to 100 and upwards per minute. The general strength equally suffers. At first, the salivary glands appear slightly tumefied, although extremely painful to the touch. No difficulty of

swallowing water shews itself until the throat becomes very much swollen, when both solids and liquids are refused. Then follows the patient's distress and difficulty of breathing, increasing every hour until death closes the scene.

Mr. Lowe, surgeon here, saw these cases several times, and he considered, from the peculiarity of the symptoms and the malignity of their nature, that it would be almost impossible to cure one, if taken even in its earliest stage. He compared the disease to malignant scarlet fever in the human subject. In conclusion, I think there can be no doubt but that there was something of a specific nature in this form of throat disease, and evidently very infectious.

*** We should imagine that situation or locality must have a good deal to do with the production of this disease. At all events, it seems to be quite a *rara avis* in stables where horses are well kept and looked after in the ordinary way.—Ed. Vet.

REMARKS ON SPRAIN OR RUPTURE OF THE GASTROCNEMII MUSCLES, AND A CASE OF PULMONARY AND CARDIAC DISEASE.

By J. Tombs, *M.R.C.V.S., late Bengal Horse Artillery.*

You mention in the June number of The Veterinarian, when speaking of lameness in horses, that a strain or rupture of the gastrocnemii muscles is very rare: I have recorded two cases [see vol. iii, New Series, page 267; again, see vol. vii, New Series, page 582].* I once met with a similar case in a heifer, caused by getting her leg entangled in a stile. I have recently had another case under treatment, which had a favourable termination: A roan cart mare, five years old, was upright in the stable-yard at night; in the morning she was quite lame—cause unknown. I saw her a month after the accident: every one who saw her before fancied she was lame in the stifle joint, and she was doctored accordingly. I fixed upon the hock as being the seat of lameness, when I saw her move at a distance, as she could not flex it, and from her hopping when urged to go fast. She straddled with and projected the lame limb out when walking. I could not discover any swelling, only a little heat on the superior part of the inside of the hock, which

* These cases had escaped notice. We feel obliged to Mr. Tombs for recalling our attention to them.—Ed. Vet.

was blistered high up. After awhile, the tendo Achillis became enlarged: the precise seat of lameness was now apparent. With two months' treatment and rest from the time I first saw her, she was fit for work, being a little stiff, with a straddling gait of the limb.

CASE.

Congestion and Hepatization of the left Lung and Pericarditis.

August 28*th*, 1850.—I was requested by a gentleman, four miles hence, to attend a valuable hunter that had been ailing three days. The animal was observed to be unwell on the 27th; yesterday, when at exercise, was dull, and wanted to return to the stable: he was briskly trotted and cantered two days before, and had not eaten as usual—was bled, and had given him two ounces of castor oil and an ounce of sulphas magnesiæ, previously to my seeing him.

The *symptoms* are now, at *eight* A.M., Pulse 84, and weak; peculiar depression of countenance; nostrils dilated; Schneiderian and conjunctival membranes blanched; legs and ears rather cold; slight distention of abdomen; fæces hard and scanty; respiration tranquil; appetite sparing; prognosis unfavourable.

℞ *Venesection;* walls of thorax setoned and blistered; febrifuges and enemas administered at P.M.; no fæcal evacuation: exhibit ol. ricini Oj. At seven P.M., bowels not responded to the medicine; mucous membranes tinged with yellow:—give ext. Barb. aloes 3j, hyd. submuriat 3j, and pulv. opii 3j; continue enemas, friction, and bandages to the extremities.

29*th*.—Pulse 84, and of the same dangerous character as yesterday; tension of the abdomen: but he has had a motion or two, and the fæces are more pultaceous, especially after an enema: features haggard, looks back frequently, continually walking round the box, eats and drinks but little, throws up his head, and crouches down the thoracic portion of the spine, as though he suffered inward pain in the chest. I frankly acquainted the proprietor that I despaired of my patient. Venesection repeated, and medicine as yesterday, omitting the ol. ricini.

30*th*.—No improvement. Symptoms much the same as yesterday; walks round the box as before; greater distention of the abdomen; fæces quite pultaceous; for the first time, drinks a little gruel. I introduced my hand up the rectum, immediately after which a quantity of gas and fæcal matter escaped; he then appeared easier for a short time. Upon inquiry of the groom, I ascertained that the medicine I prescribed had not been exhibited since yesterday. The proprietor, who was standing by, replied that he had called in another practitioner (on account of my telling

him the case was almost hopeless, and the animal being so valuable), who condemned my treatment, particularly the administration of castor oil, and gave him a draught to "counteract its effects;" moreover, his opinion of the case was greatly at variance with mine, as he stated that the horse was feverish, over-purged (as he saw two liquid evacuations, which were simply a return of the enemas), and would do well eventually by good nursing!!! In fact, there was but little the matter with him. When I heard this I was almost petrified, and again reiterated my former opinion that the horse was in imminent danger, that the lungs were diseased, and that the bowels were inactive on account of the torpid action of the liver, which viscus did not secrete sufficient bile to stimulate them, &c.; that pain was evinced in the lumbar region from the kidneys not performing their proper functions from an inadequate quantity of oxygen in the blood, caused by the great deodorizer of that fluid being unable to execute its allotted task. The owner then wished me to continue my treatment, which consisted of hyd. subm., pulv. opii., &c.

31*st.*—Symptoms worse; pulse 90, and hard to be felt at the jaw; auscultation indicated râle of the lungs, and hydro-pericarditis. Animal walks round the box as before; throws up his head; often voiding urine; slight costiveness; no appetite. ℞ ol. lini; six hours after, opii et gum acaciæ. In the afternoon, paralysis of the left posterior extremity came on.

Sep. 1*st.*—Pulse 96; breathing for the first time accelerated; legs and ears cold; cannot move; rests his head on the manger, tongue furred; mucous membranes approaching to blackness; tension of abdomen, although the fæces are voided without pain; looks back; grasps some hay, and holds it in his mouth. When turned round with great difficulty, I discovered that laminitis had taken place. ℞ as before; fomentations to the feet; the poor beast to be liberally supplied with gruel.

2*d.*—Symptoms and treatment as yesterday.

3*d.*—Dropped down, and died; he never laid down during his illness. I am now informed that the horse had an attack of influenza some length of time since, when in possession of a different owner. No doubt a portion of the lung was never restored to its normal state; and when he had the trot and canter beforementioned, which was the first for months (indeed it appears that he has not had any strong exercise since the attack of influenza), a new inflammation of the lung was set up, which extended and caused death.

Post-mortem.—The liver of a soft texture; the cardiac sac inflamed and distended with serum; the pleural membranes of the left

part of the thorax inflamed; the left lung engorged with black blood, and throughout the thick portion of it indurated and *hepatized.* The absence of water in the chest accounts for the embarrassed respiration, although the right lung was emphysematous, similar to a broken-winded horse, which circumstance, one would suppose, would have caused quick breathing.—It is with feelings of regret that I record my surprise that an old-established M.R.C.V.S. should make so slight a matter of so desperate a case, and that he did not observe ordinary courtesy, and, much more, professional etiquette, in not wishing to consult me when he was called in: had he done so, I doubt not but that he would have arrived at a different conclusion respecting the case.

One word about ol. ricini:—My experience, as well as that of many other professional friends, has convinced me that it is a safe and valuable laxative or purgative both in horse and cattle practice. I never knew any ill effects result from its judicious administration. In May last I met with a case of puerperal fever in a cow, which was cured by two bloodlettings, the exhibition of a quart of ol. ricini, ℥ij of Barbadoes aloes (which purged her well), and stimulating applications to the spine, &c. I could recite many cases where ol. ricini has had the best effects; small doses in costiveness, and large doses in constipation of the intestines.

I am, Mr. Editor,

Your's respectfully.

To the Editor of THE VETERINARIAN.

THE BENEFICIAL EFFECTS OF CHLOROFORM IN BOWEL AFFECTION, TETANUS, AND OPERATIONS.

By W. GARRARD, *V.S., Ticknall, Derby.*

To the Editor of "The Veterinarian."

Sir,—SHOULD you deem the following case worth a place in THE VETERINARIAN, it is much at your service.

June 19th, 1848.—I was requested by the Rev. J. Smith, of Repton, to attend immediately a horse attacked with colic. He was a half-bred bay gelding, four years old, of rather irritable temperament, and had never done any work except his breaking. This was the third time I had attended him within two months

under similar circumstances. The first attack occurred April 13th, and was caused, apparently, by his eating a quantity of wheat in the chaff. He was relieved on that occasion by a full dose of aloes in solution with opium and æther, assisted by the usual accessory means, as enemas, friction, &c. The second attack came on whilst he was at grass, on the 7th of June, and was a far more severe affair than the first, running on to enteritis, which was with difficulty subdued by the most energetic treatment, viz. copious and repeated bloodlettings, calomel and opium, with extensive counter-irritation, the application of hot water, and other means which it will be needless to mention. Suffice it to say, his convalescence progressed as well as could be wished up to the 19th. I may mention that his food consisted, since his last illness, of bran and boiled oats, with very little hay, and that for the last two or three days he has been turned out in a paddock for two or three hours in the middle of the day. This afternoon, about two o'clock, he suddenly commenced (to use groom's expression) "the old game," without shewing any previous uneasiness. I was in attendance in little more than an hour, and found him exhibiting symptoms of acute abdominal pain: the expression of his eye is wild and fiery; nostrils are dilated; he paces round the box, paws, and strikes at his belly with his hind feet; regards his flanks, and suddenly throws himself down, quite reckless of the fall; rolls upon his back, and curves his head to one side, in which position he will remain for a short time, then suddenly jump up, and commence the same manœuvres again; panting and reeking until the perspiration drops off him. The pulse is hard and wiry, and 60 or 70 per minute.

My first act in the way of treatment (knowing the subject I had to deal with) was to employ an exhausting bloodletting: a ligature was placed round his neck, and both jugulars opened. The blood flowed freely until he evinced symptoms of weakness, and when the ligature was removed he dropped down, and remained pretty quiet for a quarter of an hour, during which time he was raked, and an enema administered. He was, however, soon on his legs again, with his head towards his flank, shewing that the pain still continued. I gave the following draught in a little tepid water: ℞ opii ʒij, sp. æther. nit. et sp. æther. sulph. āā ℥ijs; had the sides of his abdomen rubbed with a stimulating liniment, the inferior surface being still raw from the blistering on the 7th inst. In spite of the above treatment, oft repeated, he continued to get worse. For two or three hours the paroxysms were more violent, and without intermission: his belly became tympanitic, and he shewed other alarming symptoms, such as crouching with his hind quarters in a corner of the box, sitting upon his haunches like a dog, waving his head to and fro, panting and sweating, until the

box was half filled with watery vapour. I again bled him as before to approaching syncope, and gave a tobacco enema, the latter being twice repeated at intervals of half an hour: but all to no purpose. The most potent remedies I could think of affected him no more than so much inert matter.

I told the owner that there was little or no chance of recovery, and that I had no doubt we had something more than colic to deal with; some mechanical obstruction in the bowels, or entanglement, intus-susception, or perhaps a calculus; I could not tell what: but as a last resource I would, with his permission, try the inhalation of *chloroform*. He readily consented, and I procured some chloroform immediately from a medical friend in the town, Dr. Hewgill, and, with the aid of his, Dr. H.'s, assistant, succeeded in giving it without much difficulty. We made an inhaler of a pillow coat, by folding a silk handkerchief square, and pinning it at each corner within the bag, about six inches from the bottom, which was ripped open to admit air: six drachms of chloroform were poured upon the handkerchief, and the bag placed on the horse's head, and retained there by pieces of strong tape. He was, at first, very much excited by the chloroform, pawed with his fore feet, and tried to remove the inhaler, but soon became quieter, and stood in the middle of the box trembling from head to foot: he snorted violently, and breathed deep and loud. Thinking the quantity of chloroform insufficient, I injected, with a syringe, another ounce upon the handkerchief. This second dose soon made him stagger; he swayed backwards and forwards two or three times, then suddenly fell with great violence, throwing his head back like a dead horse—indeed, all present supposed him to be dead. The inhaler was removed as quick as possible, and his head brought round to the door: he lay for some minutes—six or eight I should think—without shewing symptoms of animation, the pulse almost imperceptible at the jaw: some cold water was dashed upon him two or three times before he appeared to breathe, and, when he did, it was slow and prolonged. Presently he raised his head, and looked round bewilderingly; and at last got upon his legs, shook himself, and appeared quite free from pain: and so, indeed, he evidently was, for he shewed no more uneasiness, and required no further active treatment. I had him rubbed dry and clothed soon afterwards. He drank half a bucketful of gruel, and ate a little sloppy mash.

About a month afterwards he had another slight attack of colic; it yielded, however, at once to a dose of opium and æther. Since that time he has been quite free from every ailment of the kind, although in the interim he has been twice a patient, once for lameness and once for open knee-joint.

Did intus-susception exist in this case, and did the bowel right itself under the relaxing influence of the chloroform? Whether so or not, my impression is that the horse was saved by the above agent, all other remedies having completely failed to afford the slightest relief.

I have employed chloroform many times since it was introduced for surgical operations, and with invariable success. In a case of traumatic tetanus treated with it I was unsuccessful; I was called in late: but still the effects produced were such as to lead me to hope under more favourable circumstances—should I meet with a case—that the result would be otherwise.

Of æther, as an anesthetic, I know but little practically, never having used it but once. A spaniel bitch of my own had its eye thrust out of the orbit: how the accident occurred I know not, but, at the time my attention was called to it, it had evidently been done some hours. The conjunctiva covering the anterior part of the eye was much injected; the muscles inserted in the posterior part of the organ were swollen and intensely inflamed, the palpebræ being spasmodically closed upon them. I attempted to reduce it by drawing the lids asunder, and gently pushing the eye back with my finger placed on the cornea: but the resistance offered, and the pain the poor animal suffered, rendered this impossible. Not having any chloroform at the time, she was made to inhale æther vapour. She struggled violently during the inhalation, and made a sad howling noise, but was soon fully under its influence, when the eye was returned without difficulty. A dose of calomel and a lead lotion completed the treatment, and all was well in a few days, her vision being fully restored.

I am, Sir,
Respectfully your's.

DISINFECTION OF STABLES.

By J. W. GLOAG, *V.S.* 11*th Hussars.*

To the Editor of "The Veterinarian."

Sir,—I HEREWITH send you a paper on the Scab in Sheep, which has been translated from the German by Dr. Whiting, of Hull, and published in the "Lynn Advertiser," which, I think, will interest the readers of THE VETERINARIAN.

On perusing the last number of your Journal, I was much pleased with your remarks on the use of peat charcoal as a disinfectant. It strikes me that we have very much neglected to use

these adjuncts to health. In a former number of THE VETERINARIAN you drew attention to this subject when comparing the qualities of the various disinfectants, and you there recommended the impure sulphate of lime as a cheap article for strewing over the pavement of stables, which is a most beneficial practice. We constantly find stables which, under any circumstances of ventilation, are impure. This generally arises from defective drainage, for the want of which the urine soaks through the stones into the soil unto saturation, and then constantly sends up its noisome fumes. Drainage is of the greatest importance, and this is a subject which appears to me generally very little understood, and usually very much neglected: hence the difficulty which at times arises of maintaining a sufficiently pure atmosphere consistent with the necessary healthy warmth of stables. It has struck me that it might be advisable, as an adjunct to good drainage (or even in the absence of it), to lay down a bed of peat charcoal on the impure sulphate of lime—say one or two feet thick—and principally towards the rear of the stalls, upon which the stones could be imbedded in mortar. With these precautions it would take a considerable time before the disinfectant would be thoroughly saturated, but still the evil day (if the drainage were neglected) would arrive.

I am quite convinced, if people who lay out their property in horses would only consider their own interest, they would take the most efficient means of draining and ventilating their stables, and that the expense would be very soon repaid in the health of their horses, and by the great saving of litter. But I fear that the veterinary practitioner would not get so much to do. When the 11th Hussars were quartered in Hounslow, in 1848 and 1849, the stables were all repaved; and in some of them, on lifting the stones, the stench was so horrible as to be perfectly insupportable, the soil proving saturated to about two feet in depth. Quick lime was strewed in the stable, and all the doors and windows left open, and the place vacated for some days, before the workmen could proceed with their work. We may well conceive how disease may be generated from such fruitful sources: and what took place in those stables happens in thousands. How frequently do we hear of a certain set of stables being considered unhealthy, although possessing the same means of ventilation as the rest; and these stables will often be found to have an offensive impure smell, although perhaps absolutely cold. This arises from the defective drainage, and shews that the attention of owners of horses cannot be more usefully directed than to this point.

Norwich Barracks, 17th Sep. 1850.

OBSERVATIONS ON PUERPERAL FEVER IN COWS.

By JOHN RALPH, *V.S., Sebergham.*

INCITED by the laudable efforts of Mr. Haycock to elucidate the history and pathology of Puerperal Fever in Cows, I forward the following facts and speculations bearing on the subject :—

Connected with, though not directly coming under, the question, "At what period after the animal has calved does the disease generally supervene?" I may state, as a singular fact, that in June last I attended a cow decidedly affected with the disease, and to an alarming degree, which *did not calve until the third day after her recovery.* The calf had suffered displacement *in utero*—probably in the course of the disease; the extraction occupied some time, and was almost immediately followed by a recurrence of the disease. In several instances, I have seen the disease in this manner fully developed, almost immediately after protracted calving; but I do not recollect another instance wherein it ran its course before that act. Of course, these are the instances in which we are most likely to confound the disease in its true character of *Encephalonitis Parturiens* with debility from over-exertion in the process, which Mr. H. so correctly points out.

I have not kept a register of cases, and therefore cannot furnish data in answer to the question "At what period of life is the cow most liable to the disease?"—but had an impression that the liability increased with years; though in this I might be wrong. A heifer—I mean a beast at first calving—is not exempt from it: cows that are great milkers, and have had a few calves, are much more liable.

Respecting prevention, I fully agree with Mr. Haycock, that milking the cow before calving is generally useless, if not mischievous; as I believe the majority of the cows I have attended in the complaint had been so treated. Occasionally, the udder becomes distended before calving to a painful degree. Then I recommend moderate milking. To counteract a tendency to plethora, and to keep the paunch free from a surcharge of aliment, are the most rational means of prevention. To these may be added the exhibition of a few doses of febrifuge medicine just before and after calving.

LAMINITIS NOT CONFINED TO THE HORSE SPECIES.

By Mr. F. D. Gregory, *V.S., Bideford.*

To the Editor of "The Veterinarian."

Sir,—In reference to your article on laminitis in the September number of The Veterinarian, allow me a little space to corroborate your opinion that the disease is not exclusively confined to animals of the Solipede family. I have had several opportunities, in the course of a few years, of seeing and treating a disease of essentially the same character in the dydactyle. Amongst my employers are some cattle-dealers who buy very largely of young oxen or steers (as they are called here in the west). Some of them are driven from fairs and markets for a considerable distance, to be kept for a month or two to freshen on the farms of my clients previous to their being offered again for sale. Perhaps the next day after the arrival of one of these herds, especially if the weather is hot at the time, my attention is called to one of these animals. I find him down, and apparently suffering pain, evinced by throwing about the head, &c. The appetite for food is gone, and he breathes quick; shews great disinclination to rise, and, when got upon his feet, great difficulty to walk, nay even to stand, shifting and throwing the weight from one foot to another. Examining the limbs from above downwards, until we reach the feet, the seat of the disease is not detected. These are intensely hot and very painful, with sometimes, but not always, swelling about the coronets, shewing evidently that inflammation is there existing. The disease progressing, after some little time, as the result of the inflammatory action, a separation of the hoof may be seen to take place around the coronet, and purulent matter to issue from the fissure. The hoof is now gradually thrown off, which is a long and tedious process, and the growth of new horn must take place before the poor sufferer recovers. This is a work of months.

Such is a short account of this truly painful disease: it differs altogether in its nature from what the late Mr. Youatt and others, in their writings, called *Foul of the Foot.* The hoof is almost invariably cast or thrown off, for which we can easily account: the attachment of the laminæ not being so firm or extended over so great an extent of surface in the foot of the ox as in the horse, it is less able to resist the effects of inflammation. I have seen it occur more frequently in the hind than in the fore feet of the ox.

The details of the treatment will be hardly necessary to go into.

I, of course, treat the system in the first stage as it requires, by bleeding, purging, &c.; I also bleed locally from the coronary veins, which are numerous, and try to keep up poultices; but this is generally a failure: the patient not being accustomed to have the feet handled, he will kick them off as fast as put on. As the old horn is being cast off, I remove the portion with a knife that is likely to press upon the new growth, which I dress with tar ointment as a protection, &c.

I intended offering some further observations, but find, if I do so, I shall be too late to get my note inserted in the October number of your Journal, having driven it out to the last day and hour.

Your's respectfully.

Bideford, 15th September, 1850.

REVIEW.

Quid sit pulchrum, quid turpe, quid utile, quid non.—Hor.

On the prevailing Epizootic in Cattle, called Pleuro-Pneumonia. *By* Finlay Dun, Junior. Edinburgh. (Premium, Gold Medal.)

[From the Journal of Agriculture and Transactions of the Highland and Agricultural Society of Scotland].

It has rarely fallen to our lot to peruse a work containing so much information, and that of so highly valuable a character, as is to be found in the pamphlet now before us. Of Mr. Dun we have never heard until now. But that he has produced the most scientific as well as practical "Essay" extant on that awful disease among cattle yclept *pleuro-pneumonia,* and for so doing has well deserved his award, the Gold Medal of the Highland Agricultural Society, we feel quite certain will be readily conceded by every one into whose hands his admirable writing may happen to fall. We have marked many and lengthened passages for translation into our pages: we only regret we cannot take the contents entire as they stand.

Although pretty satisfactory evidence can be brought to shew

that a similar disease had for many years been known in Switzerland and France, yet the first accounts we have of pleuro-pneumonia in Britain date no further back than 1841, and then it came to us from Ireland, along with the Irish droves transported across the channel, whose footsteps it subsequently might be traced to have observed in its progress through our own country, as it spread devastation among our herds, and ruined many a breeder and holder of stock.

"The *causes* of the disease, both immediate and remote, are subjects full of interest and importance; and a knowledge of them not only aids in the prevention of disease, but also leads the practitioner to form a more correct prognosis, and to pursue the most approved course of treatment. It is, however, unfortunate that the causes of pleuro-pneumonia have not as yet been satisfactorily ascertained. No department of the history of the disease is less understood, or more involved in doubt and obscurity. But in this respect pleuro-pneumonia is not peculiar: it is but one of an extensive class which embraces most epidemic and epizootic diseases. And if the causes which produce influenza, fevers, and cholera, were clearly explained, those which produce pleuro-pneumonia would, in all probability, be easy of solution.

"Viewing the wide-spread and similar effects of pleuro-pneumonia, we may surmise that they are referrible to some common cause. And although much difference of opinion exists upon this subject, it cannot be denied that CONTAGION is a most active cause in the diffusion of the disease. Indeed, a due consideration of the history and spread of pleuro-pneumonia over all parts of the land will be sufficient to shew that, in certain stages of the disease, it possesses the power of infecting animals apparently in a sound and healthy condition, and otherwise unexposed to the action of any exciting cause. The peculiarity of the progress of pleuro-pneumonia, from the time that it first appeared in England, is of itself no small evidence of its contagious nature. Its slow and gradual progress is eminently characteristic of diffusion by contagion; and not only were the earlier cases which occurred in this island distinctly proved to have arisen from contact with the Irish droves, but also subsequent cases, even up to the present day, shew numerous examples in which contagion is clearly and unequivocally traceable."

Mr. Dun holds that, "although contagion may not be the sole exciting cause of all cases of pleuro-pneumonia, it is undoubtedly the principal and most fertile cause."

"Although contagion is admitted as producing many cases of

pleuro-pneumonia, still it is very generally asserted that there must be other EXCITING CAUSES at work capable of generating it independently of contagion. But if this be so, none of the many theories adduced to account for its exciting causes seem fully to explain its phenomena, and as yet no one cause has been brought forward to the sole operation of which the disease can be satisfactorily referred.

"Of the many sources from which hypotheses concerning the cause of epidemic and epizootic diseases have been derived, none seems so probable, and none affords such ample scope for speculation, as the atmosphere. Accordingly, no source has been so frequently and keenly searched, and none has produced so many theories, each in its turn purporting to elucidate the origin of all diseases whose cause was previously unknown. The ancient idea, that insalubrity of climate and locality was owing to the deficiency of oxygen in the atmosphere, is now entirely disproved. The belief that disease was produced by the gravitation of the heavy, poisonous carbonic acid gas, is fast waning away, and giving place to sounder views on the subject of gaseous diffusion. By the life-preserving and life-supporting influence of the important law of gaseous diffusion, all noxious effluvia and poisonous emanations are freely and fully diluted, and that uniform purity of atmosphere maintained which is indispensable to the existence and well-being of all living things."

"Although pleuro-pneumonia is not produced by the action of any one of these circumstances alone"—such as *sulphuretted hydrogen, seleniuretted hydrogen, carburetted hydrogen, ozone, fogs, swarms of insects, miasmata, food, climate, exposure to weather, deficient ventilation, &c.*,—"yet many of them must be considered as predisposing to the disease; and although not its immediate exciting causes, yet, by depressing the physical powers, they render the system more liable to disease, and less able to withstand its assaults. Deficient ventilation, filth, insufficient and bad food, may indeed predispose to the disease, concentrate the animal effluvia, and become the *matrix* and *nidus* of the organic poison; but still, not one of these circumstances, or even all of them combined, can *produce* the disease in question. There must be the subtile poison to call them into operation, the specific influence to generate the disease.

"On the other hand, it appears probable that the exciting cause of pleuro-pneumonia, whether it be contagion or whatever else, cannot *per se* generate the disease; but that certain conditions or predisposing causes are necessary to its existence, and without which its specific effects cannot be produced. But although these REMOTE or PREDISPOSING causes are very numerous, they are often

difficult of detection; nay, it is sometimes impossible to tell to what the disease is referrible, or upon what weak point the exciting cause has fixed itself. A source of perplexity results from the fact, that the disease appears under every variety of circumstance, and is fomented by apparently the most opposite causes. It appears in well and ill ventilated byres; it may attack cattle well fed and in good condition, as well as those starved and neglected; it may occur irrespective of the description of food, of cleanliness, and of the system of management. There is no season of the year that checks its course; no sort of weather that mitigates its severity, or seems to stay its progress. But although thus occurring in some measure irrespective of circumstances, yet a strict inquiry will, in many instances, disclose facts which before had eluded observation, and to the influence of which the disease may often be traced. The general principles of management may be sound, and the practice efficient, but still the predisposition to the disease may be referrible to the continued operation of some slight and apparently unimportant cause.

Gutta caveat lapidem, non vi, sed sæpe cadendo.

"The predisposing causes of pleuro-pneumonia admit of many divisions and subdivisions; they may, however, be considered under two general heads,—*hereditary* and *acquired.*

"With reference to the former, we know that, as the good points and properties of an animal are transmitted from one generation to another, so also are the faults, and the tendencies to particular diseases. As in the same families there is a similarity of external form, so is there also an internal likeness, which accounts for the common nature of their constitution, modified, however, by difference of age, sex, &c.

"Among the acquired predisposing causes of pleuro-pneumonia may be enumerated, general debility, local weakness resulting from previous disease, irritants and stimulants, exposure to cold, damp or sudden changes of temperature, the want of cleanliness, the breathing of an atmosphere vitiated by the decomposition of animal or vegetable matters, or laden with any other impurity. In short, under this head may be included every thing which tends to lower the health and vigour of the system, and consequently to increase the susceptibility to disease."

[To be continued].

Home Extracts.

Experiments made on Sheep with the Insect, the Ichor, the Scurf and the Blood of Sheep affected with the Scab.

By Herhwig.

The following report of experiments made on sheep having the scab (for which we are indebted to our friend, Mr. Gloag) has been translated by Dr. Whiting, of Lynn, from the German, and, we think, will be found useful and instructing to our readers. We shall continue it monthly.

Although Linnæus (*Exanthemata Viva*—Upsal, 1757) has already made mention of the insect which causes the scab, and Wichman in his "Causes of the Scab," published at Hanover, 1786 and 1791, has already expressed a conjecture that the scab in sheep and the itch in man are similar diseases, and that both are caused by an insect; and although Videbantt, in his "Practical Treatise on the Treatment of the Scab," published at Stettin, 1790, has clearly expressed his view that an insect is the cause of the scab; yet, really, the honour of proving satisfactorily the presence of the insect, as well as shewing its natural history, its distinguishing character, moreover, the situation it occupies and the way in which the disease is propagated, is due to Waby, the veterinary professor, at Wurtemburg, who has given his experience in the publication entitled "Nature and Treatment of the Scabbed Sheep," published August 1812. In this work he says, at page 47, upon the manner in which the insect causes the scab, that he often repeated the experiment of placing upon the hide of sound sheep some of the insects, and they immediately began to bore into the skin, and the scab fully manifested itself; that the disease so produced got well spontaneously when the experiment was performed only with the male insect; and, on the contrary, it continued obstinate, and spread itself more and more, through the production of young insects, when the insects were of both species, or females impregnated; and, that when the disease was so produced, it could be entirely cured by removing every insect from the infected sheep.

It is fully acknowledged (at least by the German veterinary surgeons) that these observations are of the highest interest, both for shewing the nature and cause of the scab, as well as for pointing out practically the most likely way of curing this evil. Moreover, in a political point of view, it is of great importance to know the time likely to expire between the period when sheep may have

been exposed to infection and the outbreak of the scab. Waby himself has made no mention of this last, but the result of his experiments gives the necessary data. As these experiments were the only ones made on the subject, I determined to repeat them, and further, to investigate the subject by, in some degree, modifying them. They were undertaken in the spring of 1827 and in the winter of 1827-8, under the eye and with the assistance of the other teachers of the Royal Veterinary School, and they may therefore on this account be considered as worthy of implicit confidence.

1st.—The three sheep from whom the infection was taken were, on the 5th of October, 1827, bought of a man at Henningsdorf, seven and a half miles from Berlin, and were taken to Berlin in a cart: they were each immediately placed in a separate stall at the Veterinary School, and a different superintendent was appointed for each: they were each three years of age, apparently well-fed, and in a moderate degree affected with the scab. There was upon each the small swellings as well as scurf, together with sore places and a number of insects, which under the microscope appeared exactly like those described by Waby. No evidence was afforded. Neither of these sheep had contracted the scab spontaneously or through infection.

2d.—The three sheep inoculated and marked 1, 2, and 3, were four year old good wethers, which, on the 1st October, were chosen from amongst thirty that were sold to the butcher for slaughter. They came from a situation where there was no scab amongst the sheep, and were in very good health, and on the very day were brought to the Veterinary School. We satisfied ourselves, both by strict inspection and by observing them for some time, that they were perfectly free from the disease. These sheep also had each a separate stall, and three different persons to attend them.

3d.—The six other sheep that were inoculated, and which were numbered 4, 5, 6, 7, 8, 9, were chosen, on the 2d of October, from a fine flock of M. Grafen, of H——. To my certain knowledge, for at least five years they had had no scab nor any kind of disease of their hide; and, at the time of the experiments, not the slightest disease could be discovered. These also were placed each in separate stalls, and had a distinct attendant.

4th.—The food of all the above sheep was 3lbs. of excellent hay, and their drink pure fresh water; and they were littered abundantly with clean and quite fresh straw.

5th.—All the sheep remained constantly in their stalls, excepting only for the purpose of performing the experiments and the daily observation of the effects of inoculation.

6th.—The operation and the daily examination of the sheep was

performed each by a different assistant, and they were brought out and held by a different assistant, in order that no infection could be communicated from one sheep to another.

7th.—For at least two years there had not been a single sheep infected with the scab in any of the stalls in the institution.

Lynn Advertiser.

[To be continued.]

Peat Charcoal.

It is to be recollected that "deodorization," so called, by any other means than peat charcoal, is effected through the action of different compounds upon feculent matter, or by the liberation of certain gases, to act upon, and, it is hoped, neutralize or destroy, the original noxiousness. Hence *two* odorous matters are placed in combination; and although the effluvium becomes changed, it is not destroyed or absorbed. The doubt then naturally comes, is such *deodorization* disinfection? I believe it is not. But what is the action of peat charcoal?

It is to be recollected that it is *perfectly pure and odourless*, possessing the power of absorbing above 80 per cent. of aqueous matter, and *at least* 90 volumes (I believe a good deal more) of those gases which are inimicable to animal existence. It has also some peculiar power (independently of the well-known property of carbon) to draw to it, from the atmosphere, ammonia and sulphuretted hydrogen. Most greedily it absorbs those gases, treasuring and holding them up in the countless cells which the extreme porosity of its nature provides in every grain; and almost the moment contact takes place, odour ceases to be perceptible.

Still, the gas itself which yielded the odour *continues to exist*; although the compound is odourless, the gas is there undestroyed, yet, I believe, rendered powerless of evil to mankind.

The fact of the purity, &c., of peat charcoal will not be questioned: the latter statement, however, naturally will; but the test is within the reach of every one.

Charge peat charcoal with any given quantity of those gases, so that the compound be *odourless*. Place it then, or at any time after, on a red-hot plate; and as the grains become destroyed by fire, the gases *will be restored to the atmosphere in their own original state*.

In this rests one of the great advantages of the compound as a *manure, for no chemical action takes place to change the nature of those gases*, which we all know are *essential* as the food of plants. In the compound they exist until, by the action of the soil and the atmosphere, gradual decomposition of the whole takes place, when

carbonic acid gas is also yielded to the plant. Gradually and slowly this action proceeds: and, as rain comes, the peat charcoal (which will usually last in the land for three, four, or five years) receives from it a renewed supply of ammonia and salts, thus unceasingly storing itself with increased fertilizing power.

Such being the actual properties of peat charcoal, may we not assume that it is a "*disinfectant*," if any thing can be? Being perfectly pure itself, it seeks for and draws from the atmosphere around all impurities. It becomes the recipient for that noxiousness which, no one will doubt, acts with evil upon us, and will not yield it again until it is itself destroyed.

If *infection* exist, where there is no perceptible odour, peat charcoal may not be a disinfectant. On the other hand, if we know that *infection* does exist where noxious odours are present, and that the withdrawal of those odours from the atmosphere gives health, I may perhaps assume that so far, at least, *peat charcoal is a disinfectant as well as a deodorizer*.—JASPER W. ROGERS.

Farmers' Herald, September 1850.

Foreign Extracts.

ON PODOMETRIC SHOEING COLD, AS PRACTISED IN THE FRENCH ARMY.

By M. REYNAL, *Chief Veterinarian to the 6th Lancers.*

UP to 1840 the French cavalry were shod conformably to principles laid down at the veterinary schools, under the surveillance of the respective regimental veterinary surgeons. These principles were the same as had been taught by Lafosse, Bourgelat, Chabert, and Gohier, modified in accordance with such further knowledge in the anatomy and physiology of the foot as had been elicited by the successive labours of Giraud and Bracy Clark. These modifications had for their chief aim the diminution to the utmost possible extent of the opposition set up by the iron shoe to the elasticity of the natural unshod foot of the horse; and up to the year 1840 were the methods of shoeing laid down by these several illustrious masters scrupulously followed.

It was at this period that first appeared the system of podometric shoeing,—which means taking measure of the foot, and adapting the shoe cold to it;—a system which was said to protect the horse at once from the accidents to which he is liable in the forge, and to the ill consequences of shoeing as then practised. The animal had no need any longer to go to the forge; the smith, no

longer teased by subduing him to obedience thence, would have no occasion for twitches, bonds, &c., but would have to make use only of kind, coaxing usage, such as was said to be unknown in the forge.

Heaps of faults were found with the old method of shoeing, and all sorts of harm-doing ascribed to those who practised it, in order to make room for, and give *éclat* to, the new introduction. It was said that nothing could be more objectionable than the methods of measuring the foot by means of a blade of straw, or turning a shoe for it after the pattern of the old shoe; and that in such ways as these no exact fit ever took place.

To obviate these objections it was that podometric shoeing, cold and at home, was recommended. And in taking measure of the foot, should the smith not immediately make the shoe, or should he have several other feet to shoe, he is able either to delineate upon paper or in his register the figure of the foot he has been measuring. For which purpose he lays the podometer upon the paper, and traces accurately with a pencil its outline. And the workman who has not a podometer with him, may yet avail himself of a very simple means to take measure of the foot. Let him apply a sheet of paper upon the ground surface of the pared hoof, and then apply pressure all round the circumference of the hoof, so as to make an impression upon the paper which he can afterwards trace with pen or pencil. And in the forge he can afterwards measure this against the shoe by the aid of his podometer.

If the horse is being shod for the first time, the smith, after having taken off the shoe and pared out the foot, and taken measure of it with his podometer, selects an appropriate shoe according to ordinary procedure. Then he compares the turn of the shoe he has taken with the curve in his podometer, and modifies it if requisite.

Whenever the horse has once been shod on the podometric principle, the smith searches in his register in the forge for the imprint of his foot, of which he takes the dimensions with his podometer, and afterwards acts as though he had taken measure of the foot itself.

To shape the shoe of the opposite foot, he does nothing but reverse the podometer, and proceed afterwards in the same manner as for the first. The shoe having been cooled, stamped, and filed up, the smith fits it to the foot with his improved rasp, and then nails it on in the ordinary manner.

This—the podometric method, specially recommended for the army—has been for some years in practice, either by way of trial, or else as established in several regiments. Nevertheless, nobody but M. Reynal has ever made known the practical results of it.

Is such silence, our author asks, to be regarded as a proof that such trials have proved favourable, or that the novelty is one which deserves to be ranked as an useful addition to our science? or, are we to conclude that the army veterinary surgeons, discouraged by insuccess, have virtually abandoned it, by not caring to give any notice whatever of its result?

In setting his opinions in opposition to the podometric system of shoeing, M. Reynal desires they may be tried by observation and experience alone. He denies that podometric shoeing came first to be known in 1840. Lafosse, father and son, Bourgelat, Gohier, Chabert, and indeed all who have been engaged in the practice of shoeing, were acquainted with and had practised this method of shoeing. Its principles had been developed by M. Renaud and in the practical lectures of M. Delafond. From which M. Reynal concludes that the author of the asserted new (podometric) shoeing has only generalized principles, and replaced the old measure of the straw by a new instrument he calls a *podometer*. And after all that has been vaunted about the system of shoeing cold and away from the forge, he is of opinion that the objections to the old method have been based upon the ill-treatment horses have received when taken to the forge to be shod, and that these have made way for the new.

After having convinced himself, after four years' trial, that cold shoeing generally in use among the horses of a regiment was attended with nothing but serious inconvenience, M. Reynal infers from a series of observations,—1st, That the heat of the (heated) shoe, when its application to the foot is limited to a reasonable time, nowise harms the living parts of the foot; 2dly, That fitting the shoe hot, so far from being injurious, is absolutely necessary to the solidity and durability of shoeing; 3dly, That the modifications the hoof (through shoeing) undergoes in some of its physical properties, put it into a more favourable condition to bear shoeing, and to resist such external agents as might deteriorate it.

So that, summing up M. Reynal's conclusions, they shew:—

1. That cold shoeing, generally adopted, is attended with more inconvenience than advantage, and particularly where it is practised by blacksmiths of no more than ordinary power.

2. That the long-continued practice of it gives false direction to the wall at the quarters, hastens the deterioration of broken feet, while it renders the hoof, of itself, brittle.

3. That many of the inconveniences, far from being, as in hot shoeing, the result of inattention or ignorance on the part of the smith, are inherent in the method itself.

4. That shoes fitted cold to the foot are not so firmly seated nor so enduringly so as shoes fitted hot.

5. That hot shoeing, methodically practised, is nowise hurtful, and that the burning necessary to seat the shoe has no effect in producing contraction of the foot.

6. That the latter method, executed by a workman of ordinary power, will tend more to the conservation of the horn of the hoof and the rectitude of the *aplombs*.

7. Lastly, that hot shoeing, with much less superintendence and artistic skill, will yield better results under the threefold respect of duration, security of shoe, and conservation of the hoof.

VETERINARY JURISPRUDENCE.

County Court, Halifax.

Horse Case.

Yesterday, before his honour, James Stansfield, Esq., judge, a disputed case of the soundness of a horse, and a warrant arising out of it, came on for trial and adjudication. The plaintiff was Mr. George Williamson, of Leeds, horse-dealer, for whom John Arthur Ikin, Esq., town clerk of Leeds, appeared; and the defendant was Bernard Hartley, Esq., merchant, of Thorn Tree, Halifax, on whose behalf Mr. J. H. Mitchell was retained. The action was for £19..19s., difference of the price between its cost and what it sold for, with the charge for keep of the horse from the time of purchase to the time of sale. Several parties interested in horse-flesh were present in court.

Mr. Ikin opened the case with a plain statement of the facts he proposed to establish, and called

George Williamson, who said that he was in treaty with Mrs. Bolland for this horse, subject to Mr. Dray's approval, for £48. Dray examined the horse. I gave a certificate of unsoundness. I sent the horse to Young's livery stables, and paid him £5..5s. I sent him on the 21st May. I paid the auction and the printer. The horse sold for £27.

Cross-examined.—There might be twenty bidders at the sale. In my judgment it was a fair open sale. It was to be sold at any price. It might have gone for £5. I preferred sending the horse to Young's to bringing him to Halifax. I have been five or six years in trade. I have bought some scores of horses. I first saw the horse at Northallerton. I believe he asked me some £70 or

£80. I did not ask the groom at Northallerton, in May, to warrant the horse. I saw the groom on the same horse, at Leeds, the day after. I got the groom to run him down the street. I received the horse. I do not recollect asking him the price of the horse. It was the same horse I gave £42 for. I think he asked me £50. If he had been gingered, he would have gone well. After I bought him, I gingered him. I liked the look of the horse. The man told me at Leeds that he belonged to a gentleman at Halifax. I came over to Halifax, and saw Mr. Hartley, and gave him £42 for him. I examined the horse, and said that he was lame. I cannot tell you what is the unsoundness. I charged him with unsoundness in his fore feet.

Edward Coleman Dray, veterinary surgeon, Leeds.—I examined the horse at plaintiff's stables, in May, at Mrs. Pollard's instance. I found the horse lame in its fore legs. I had the horse's shoes removed, and found considerable aberration of the feet. There was convexity of both soles, also contraction of the heels of the hoof, more particularly the off or far foot, also indentation in the anterior part of the wall of the foot. That examination satisfied me that the horse was unsound. I did not then give a certificate. The unsoundness was of a chronic character. I saw the horse again in the afternoon, and the lameness was then more apparent. I saw the horse on the 21st June, at Young's stables, in the presence of Mr. Morville, and the horse was then lame. The appearances were unchanged, and would constitute unsoundness, although the horse might not go lame. I saw him again on the 23d June, at the blacksmith's shop, with Mr. Scriven. The shoes were removed with care. All the appearances were the same. I have seen him to-day, and have driven him from Bradford.

Cross-examined.—He did not go lame this morning. I have not heard of his having had a kick at Harrogate. The horse has had lameness. It is a disease which joins the sensitive to the insensitive part of the hoof. The contraction of the foot is the result of disease, and not the natural conformation of the foot. If this horse went over the stones, I have no doubt he would go lame. If the horse has gone for six months sound, without exhibiting lameness, he could not have acute laminitis at the time. He puts his heels down first if suffering from it. I have not found cart-horses more subject to this disease than others. Mr. Yates was not by when I examined the horse. The unsoundness is observable to a professional eye. Contraction of the heel and convex soles can co-exist, and do in this instance.

William Clay, livery-stable keeper, Leeds.—I was requested by Mrs. Bolland to purchase a carriage-horse for her. I saw the

horse at my stable. I thought the horse would suit Mrs. Bolland, and told Williamson he had better go over to Halifax. The horse had no saddle on when he came into my stables at Leeds. I saw the horse in June; he was lame. He has not very good feet.

Cross-examined.—I have been nineteen years acquainted with horses.

Re-examined.—There was nothing in appearance as to the unsoundness when I saw him at Leeds; if there had been, I should not have recommended Williamson to buy him.

Mr. Edward Yates, veterinary surgeon, Leeds, corroborated Mr. Dray's evidence as to the unsoundness of the horse.

Mr. Scriven, veterinary surgeon, Aberford, also corroborated the same fact. There was indentation in the front of the foot, which is a sure indication of internal disease.

Mr. Robert Byron, veterinary surgeon, Bradford, also stated that the unsoundness was from chronic disease. I afterwards attended the sale, and bought the horse for Mr. Rouse for £27. [This witness used the pronoun "we" several times in giving his evidence, which was subsequently commented on by Mr. Mitchell for the defence, who argued that he was interested in this action.]

James Young, livery-stable keeper, Leeds.—The horse was in my stable from 21st May to 25th June. The sale was conducted fairly. I do not consider him a sound horse, nor did I then. Williamson paid me five guineas for his keep.

John Mitchell, veterinary surgeon, Leeds, corroborated the statements previously made.

Mr. J. H. Mitchell addressed his Honour for the defendant, and as to the law, contended, on the authority of Chesterman *v.* Lamb, 1 Adolphus & Ellis, that a tender of the horse ought to have been made to the defendant previously to selling him by auction.

His Honour.—I think that the tender only affects the question of his keep.

Mr. Mitchell then called witnesses for the defence.

Mr. John Morville, veterinary surgeon, Wakefield.—I have been in business twenty-seven years, and bought the horse for Mr. Hartley. I examined him at Leeds, in June, at Mr. Young's stables, and found him sound. Mr. Young told me he was lame. There was no one else there. We had the horse run up and down, and Mr. Young said afterwards, he thought he was sound. I saw him again after I had been at Boroughbridge fair, and found him sound. If the horse had had chronic disease of the lamina, he would always put his heel down first. I saw him twice in June, and he put his foot down flat. I never knew a case where a horse, after having separation of the lamina, became

sound. If he had separation or chronic laminitis, he could not have travelled from Northallerton to Halifax in one day.

Cross-examined.—I examined the horse when bought first at York. Saw his feet; there was no contraction of the heel.

To his Honour, in reply to a question, "Irregularity of secretion is not disease."

Henry Wheatley, veterinary surgeon, Halifax.—I have been in business upwards of thirty years. I examined the horse on the 4th of May, at Mr. Hartley's request. I examined him with care, and did not discover any disease to which the foot is liable. I certified as to his soundness.

Cross-examined.—There was no contraction of the heel.

Mr. Joseph Carter, veterinary surgeon, Bradford.—I saw the horse on the 30th July, and my attention was directed to his fore feet. I did not discover any disease. If partial separation had taken place, it is impossible for him to go unlame. He always went sound in Halifax streets. I have seen him at Bradford and Harrogate. I understood he had got a kick at Harrogate.

Cross-examined.—There was no contraction of the heel.

Benjamin Bower Mitchell, veterinary surgeon, Hull.—Had been in business twenty-five years. I examined the fore feet of the horse, and did not find any disease. There was slight indentation, but nothing of any importance. There was no appearance of laminal disease. I should have undoubtedly passed the horse as sound, if required to examine him for any gentleman in court. If a horse had the disease alluded to, he could not have been ridden from Northallerton to Halifax without exhibiting pain.

Cross-examined.—The shoes were not taken off when I examined him. I think I can give a good professional opinion without taking them off.

John Marsden, groom to the defendant, had driven the horse in winter regularly, and he never exhibited any lameness. The horse was always firm on his feet. I rode the horse from Northallerton to Leeds, and then to Halifax, in one day. The distance is about sixty miles. Williamson saw the horse in Leeds when I passed through, and bid me £40 for him; but I referred him to my master. Afterwards he came and bought the horse.

Bernard Hartley, Esq.—I had the horse from December to May. He did not exhibit any lameness, nor put out his feet in any particular way. I consider the horse was always hard worked while with me.

J. A. Ikin, Esq., briefly replied on some parts of the evidence, after which, his Honour asked if the horse was here, and being answered in the affirmative, he expressed a wish to see him. Consequently the horse was sent for to the doors of the Court. [It

appeared that Mr. Byron had rode him over from Bradford in the morning.] His Honour, and almost all in Court, then went to look at the animal, and on returning judgment was given.

His Honour.—I consider the onus of proving unsoundness rests with the plaintiff, and I do not think he has produced such a preponderance of evidence as establishes that point Then there is a material point in Mr. Morville's evidence relative to Mr. Young, who, after once giving his opinion that the horse was unsound, afterwards said that he thought him to be sound. I think, too, that he could not have been rode in twelve hours from Northallerton to Halifax, had he been unsound. Verdict, therefore, must be for the defendant; but as the plaintiff made an offer to the defendant which I think should have been regarded with favour, and would have saved expense, each party must pay his own costs.

Leeds Mercury, 17th August, 1850.

*** Our thanks for the above.—[ED. VET.]

PROCEEDINGS OF THE COUNCIL OF THE ROYAL COLLEGE OF VETERINARY SURGEONS.

Sitting of September 2, 1850.

[SPECIAL MEETING.]

Present,—The PRESIDENT, the SECRETARY, Messrs. CHERRY, sen., PEECH, WILKINSON, J. TURNER, WITHERS, GODWIN, HENDERSON, A. CHERRY, ERNES, Professors SIMONDS and MORTON.

THE minutes of the last meeting were read and confirmed.

A discussion took place as to the publication of the Reports of the Council meetings, during which it was stated that the Editors of the Veterinary Periodicals would insert the reports intact, as furnished by the Committee, and by the authority of the Council.

Mr. Ernes objected to the Council furnishing its own reports, and thus blowing its own trumpet.

Several members urged that such a course was necessary, in order to satisfy the veterinary public, and to exculpate the Council from the charges which had been made against it.

The discussion on the by-laws was then resumed.

In reference to law 37,

Mr. Ernes said he considered the present mode of examining candidates very objectionable. The time was too short, and the general method adopted was not sufficiently stringent. He suggested that the students should be examined, in part, by means of written questions, which they should draw from a vase, and answer at once (in writing) without access to books. His object was to do away with the present system of grinding.

The Secretary said the question had been considered at some length, and, though some alterations were deemed advisable, it was concluded that the time had not yet arrived when they could be carried out. Besides, a total re-organization of the Board would be needed before the alterations could be effected.

Mr. A. Cherry thought this was not a subject for a by-law, but one to be regulated by the Council as they might think proper. He thought it best that the clause should remain indefinite.

Mr. Wilkinson complained of the shortness of the examinations, and thought the time was arrived when the required alterations might be carried into effect.

Mr. J. Turner said the pupils were occasionally examined, in writing, by the present system.

Mr. Ernes moved that the examinations should be, in part, by writing; but afterwards withdrew the resolution.

In the discussion on law 41,

Professor Simonds proposed that the least time for which a pupil could be rejected by the Examiners should be three months (as was usual in other colleges), instead of five months. Practically, he said, the rejection would be for five months, seeing that that was the interval between the examination in December and that in May; but he could conceive of cases occurring in which pupils, who were deficient, perhaps, on one or two minor points only, would apply for and go to the expense of having a special examination in order to save two months' time; in case, for instance, of an appointment in the army or elsewhere presenting itself for immediate acceptance.

Professor Morton seconded the proposal.

The Secretary was desirous that the time should also be shortened with reference to pupils examined in May, and now rejected to December. He thought the pupils might study at home, and prepare for re-examination without attending at College again.

Prof. Simonds thought this impracticable, though he did not doubt that much good might be done by private reading and research. In the summer months animals could not be dissected, and thus no progress could be made in practical anatomy, in which pupils were frequently deficient.

On the motion of *Mr. A. Cherry*, seconded by *Mr. Wilkinson*,

the time of rejection was left to the discretion of the Court of Examiners.

A discussion then took place as to the form of the diploma—whether it should emanate from the President, the College, or the Council.

Mr. Godwin proposed the adoption of the form suggested by Mr. Jago; viz. that the admission should be by the Council.

Mr. Ernes seconded the motion.

Mr. A. Cherry supported it, and also suggested that the President, or Vice-President, and two Members of the Council, should attend the day after the examination, in order to sign the diplomas granted.

The Secretary thought the diploma should issue from the College, or the President, as its responsible head. He preferred the latter, and would therefore move that the present form should be retained.

Mr. Peech seconded the amendment.

After a discussion respecting the necessity for the signature of the President being attached to all diplomas, whether granted by the Council or not, the Secretary's amendment was put and lost.

The original motion was then carried.

Mr. Wilkinson drew attention to the fact that blank diplomas had frequently been signed before they were granted, and subsequently filled up with the names of the parties receiving them. If this system were continued, it might happen that at some future time diplomas might be given to improper persons.

Mr. Godwin concurred in Mr. Wilkinson's opinion.

The Secretary said no diploma had ever been issued to a wrong person; but that, on the contrary, many had been granted which had never been applied for.

Notice of motion was then given by Mr. Wilkinson on the subject.

On the motion of *Mr. J. Turner*, seconded by *Mr. Withers*, it was resolved that the signatures of the teachers of the veterinary schools should be appended to the diplomas, as well as those of the examiners.

In the discussion on law 73,

Professor Simonds proposed that the duties of the Registrar, which next year would be very light, should be performed by the Secretary.

Mr. Godwin moved that any honorary distinctions appertaining to the members should be inserted in the Register.

Mr. Withers seconded the proposal.

Mr. Henderson wished to know how proper information on such

points could be obtained, and whether the Registrar was to be accountable for any inaccuracy in these particulars.

Mr. A. Cherry enumerated the duties of the Registrar, contending that they were too onerous to be added to those devolving on the Secretary, who cannot be adequately remunerated for the labours already officially performed, from the peculiar circumstance of being obliged to be annually elected from the Council.

Mr. Godwin's motion was put, and carried.

The remaining by-laws were amended and passed.

The Secretary read a letter of resignation from Mr. Field, the treasurer.

Mr. Cherry moved that copies of the by-laws, as amended, should be printed and distributed.

The motion was seconded by *Mr. Ernes*, and passed unanimously.

A committee was appointed for the preparation of the report of the meeting for publication, consisting of the Secretary, Mr. Wilkinson, and Mr. A. Cherry.

The proceedings then terminated.

THE VETERINARIAN, OCTOBER 1, 1850.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

OUR readers will participate with us in the regret that with the "Ninth Contribution," published this month, conclude—for some time, we fear, at least—Mr. Haycock's Papers to THE VETERINARIAN. Our acquaintance with this gentleman has ended as it began,—upon paper. This alone, however, we deem sufficient to warrant us in setting him down as a man of steady and acute observation, possessing the unflinching determination to honestly and faithfully record as much, and no more, of cases occurring in his routine of practice, as shall shew, in its natural light, every circumstance and incident connected with them, without any attempt or intention to shape them to his own views, whatever such views might be, or to make them appear otherwise than they really and truly represented themselves. If readers of cases are to form any

opinions on their treatment, or to come to any conclusions as to the soundness of any "remarks" that may be made on them, it is absolutely necessary, not only that the pen of the reporter should be a faithful transcriber of his observations and proceedings, but that no phase or change in the condition of the patient, or even any estimate or opinion he may at the time, in his own mind, form of his patient, should escape observation, but be minutely and honestly recorded. By the report, and by that alone, can the reader be informed. To him the narrative should be made to appear upon paper as close a transcript as possible of the impression the case made at the time upon the narrator of it.

After what we have seen, we can have no hesitation in asserting that considerations such as these have directed the pen of Mr. Haycock while drawing up his "Contributions." Indeed, so carefully and methodically has he conducted his reports, that they may serve as patterns to others employing their hours at home in this very useful, and truly essential, part of their professional duties. Facts obtained from observation of living bodies, in a state of health as well as disease, we all know constitute the groundwork of medical experience; and that surgeon, or veterinary surgeon, will form for himself the safest and surest foundation to work upon, who shall register and treasure up the largest number of such facts. "Pin your faith upon no man's sleeve," is an old and valued maxim for our guide in medical practice; and, we may add, in order that we may have our own observations indelibly stamped upon our memory, registries of cases ought to be made, out of which there is any thing to be learned, as early as possible after their occurrence, lest the shadows of them, by lapse of time, prove too faint to afford any useful or reliable minutes being made of them.

The subjects comprehended in Mr. Haycock's "Contributions" are, Lymphatitis, Megrims, Congestion of the Lungs, Typhoid Pneumonia, Phlebitis, Inflammation of the Bowels, Concussion of the Brain, Disease of the Spleen in the Dog, Rheumatism, Pleuritis, Puerperal Fever, Abscess of the Liver, Abscess of the Trachea, Hemorrhage of the Liver, Rupture of the Stomach, Purpura Hemorrhagica, and Scarlatina. The dates of the cases extend from 1842 to 1849 inclusive, comprising the period Mr. Haycock has been in practice, his diploma bearing the registry of the former

year; thus shewing that it has been his constant custom, from first to last, to note down whatever worthy of record might meet him in his professional career. Pursuing such a habit as this, any practitioner, in the course of a few years, will really become surprised himself to find what leaves he has occupied of his "Sick Record," and what a number of valuable facts he has amassed. Would but half of our professional brethren engaged in practice act as Mr. Haycock has done, what strides we should be found making in the progress of veterinary medicine and surgery, compared with the creeping advancement we really are accomplishing!

To severally take the subjects but now enumerated into consideration, and individually examine their merits and demerits, would, in an article like this, be quite out of the question. On some future day we may do so. Meanwhile, we may fearlessly assert that, taking the "Contributions" for what they are intrinsically worth to the actual practitioner of veterinary medicine, and for what they promise to be worth to the man who shall one day set about the arduous task of compiling a system of veterinary nosology, we entertain ourselves, and hear from others, but one opinion concerning them; and that is, that they are *practical* and *excellent*, and do the greatest credit to their author. The cases by which every Contribution is commenced, and of which some of them mainly consist, are detailed with that conscientious faithfulness, that it is within the power of their reader to judge for himself whether the name prefixed to them be appropriate, or the "remarks," through inferences and deductions, founded upon them be legitimate, and such as the details warrant. No circumstance is kept out of view, nothing has occurred but what appears mentioned; and if either the "name" or the "remarks" be inappropriate or unwarrantable, Mr. Haycock holds himself impeachable at the tribunal of public judgment. For our own part, we can only regret that we are to hear no more of such a contributor; at all events, for the present. Let us foster the hope that others, stimulated by the laudable example Mr. Haycock has set them, may set about sending us whatever they may have "standing upon their books" that will admit of being moulded into the shape of fresh "Contributions to the Pathology and Practice of Veterinary Medicine."

One word more:—Mr. Haycock has paid merited encomium to

the memory of the late John Field, concerning whom, we opine, he could know nothing except from the "Posthumous Records" he is, no doubt, possessed of. No person, save one who has dived into the depths of veterinary pathology as Mr. Haycock has done, would have discovered, in the *rudis indigestaque moles* poor John Field left behind him, gems of that precious and original character that demanded being brought to the light of the professional world. Even these afford, however, but an imperfect specimen of what their fabricator could and would have achieved fer veterinary science, had his valuable life been spared; neither were near so many of his "Records" published as were still left behind in his brother's—Mr. Wm. Field's—possession.

WE this month publish the first of the *official* Reports of the Proceedings of Council in the form in which it has been handed to us by the Secretary. Its amplitude affords room for all the requisite information, while its official character guarantees its correctness, and releases us from responsibility thereon. We can entertain no doubt but that, in its present extended form, the Report will give general satisfaction.

MISCELLANEA.

Hybernation of Animals.

To the Editor of the "Medical Times."

SIR,—I have just read, in the last number of the *Medical Times*, Feb. 2, page 88, the following passage, which, being contrary to the usually received opinion concerning the changes which animals undergo during hybernation, and at variance with the experiments of physiologists, I beg permission to make a few remarks.

The passage alluded to runs thus:—"With hybernating animals, Reynault found less oxygen, of course, consumed. They give off little carbonic acid, absorb oxygen and nitrogen to such an extent, that *they increase in weight, actually fatten on sleep!*"

About three years ago I watched very attentively the change of condition, with regard to weight, in the *Myoxus Avellanarius*, during its hybernation, but am sorry I cannot now find the notes I took on the subject. However, I accurately weighed the creature, without disturbing its torpor, nearly every morning, for the space of about six weeks previously to the termination of its sleep, and

found its weight gradually diminishing. During the above period it lost from twenty-five to thirty grains. I cannot be exact, as I am writing from memory; but of the fact of loss of weight I am certain, and am now surprised to find the assertion, that animals, during hybernation, not only increase in bulk, but fatten. Prunelle found that bats lost 1-32 of their weight between the 19th of February and the 12th of March. It is generally known, that during hybernation a part of the fat formed in the autumn is consumed to nourish the body. I found, likewise, that defecation went on slowly, but regularly, during the winter.

I cannot look upon hybernation as sleep, in the usual acceptation of the term. I regard it as a very different phenomenon, and one *sui generis*. Some organs in animals may be said to hybernate; that is, their principal function is inactive during winter, whilst, in other creatures, the whole system puts on this peculiar condition.

I am, Sir,

Your obedient servant,

J. W. Moses, M.D.

St. Asaph, Feb. 2, 1850.

Age of Horse-shoes.

To the Editor of the "Monthly Magazine."

Sir,—As the following query will occupy but a small space in your Magazine, I trust to your goodness to insert it:—

Were horse-shoes in use before the time of Pliny, the naturalist? If they were not, when were they first adopted?

Your's, &c.,

Veterinarius.

Oct. 17, 1804.

Answer to the above.

Sir,—I am totally unacquainted with any writer previous to Pliny the naturalist, by whom horse-shoes may be mentioned. But Suetonius, his contemporary, relates an anecdote in the twenty-third section of the "Life of Vespasian," that is not entirely foreign to your correspondent's query. He says, that Vespasian, being one day upon a journey, suspected his muleteer of dismounting to shoe his mules, only that he might afford delay to some one who sought the emperor on legal business. Vespasian immediately asked the cost of shoeing, and (in the words of one of our old translations) articled for half. "Mulionem in itinere quodam suspicatus ad calceandas mulas desilisse, ut adeunti litigatori spatium moramque præberet; interrogavit, quanti calceasset, pactusque est lucri partem."

Your's, &c.,

Atticus.

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LAMENESS IN HORSES.

By WILLIAM PERCIVALL, *M.R.C.S. and V.S.*

ACUTE LAMINITIS.

[Continued from page 481.]

THE PROGRESS OF ACUTE LAMINITIS is marked by that pain and distress to the animal which cannot fail to excite compassion for him from all around, while even his medical attendant feels himself unable to refuse sympathy for his suffering patient. Day and night, night and day, is but one continued scene of loud and sad complaint: the patient being found either lying and groaning and kicking about his limbs in torment, or else standing and breathing hard and quick, and oppresively, looking most imploringly, and pawing or shifting his feet without intermission. This distressing scene holds as long as the third or fourth, or, may be, fifth day; and then, in the event of our treatment proving at all successful, some abatement of the pain and fever may be looked for, and we may venture to hope our patient so far has weathered the storm favourably. But should no such propitious change be apparent, no glimmering of amendment be perceptible, we may augur badly of the result. Flesh and blood cannot for any great while longer maintain their vital force against so ravaging and unrelenting a foe.

THE TERMINATIONS OF LAMINITIS, as they are called, may be said to be four:—*Resolution*, *effusion*, *suppuration*, and *mortification*. And these may be accounted usually to occur in the order in which they are here set down; though they rarely can be said to take place independently or singly.

Resolution is commonly meant to imply the disappearance of a disease without leaving behind it any ill consequences. If a horse, therefore, having had laminitis, recovers without experiencing any

material deformity of hoof or consequential lameness, his disease is properly considered to have terminated in resolution. So that resolution becomes the termination beyond all others to be sought after;—the only termination, in fact, which leaves the foot free from any such alteration of structure as amounts to disorganization, and consequent impairment or destruction of its functions. About the third or fourth or fifth day we hail with joy symptoms of the disease giving way. The pain and fever are diminished. The horse stands firmly and without flinching upon his feet, which have lost their burning heat, and even moves them with tolerable willingness and ease; and does so of his own accord, to change his posture or walk round to his manger. For now his appetite begins to return, and altogether his aspect is changed from despondency to comparative cheerfulness. Not, after all, that the feet are returned to their normal condition, as, in a strict pathological sense, resolution would seem to imply. Such, in practice, we do not find to hold true: effusion, more or less, invariably occurring, and, for a time at least, remaining.

EFFUSION, therefore, is in a measure involved in resolution, though the meaning commonly assigned to it is a termination in advance of that stage. Instead of the crisis we are about the third or fifth day anxiously looking for, the disease continues, though with unincreased violence, a day or two or three longer, and then the pain and suffering abate, and the animal appears to be surmounting his troubles; though, as but too frequently follows, it is but to experience others of another kind, arising from the effusion into, and consequent disorganization of, the parts within his hoofs, which is at the time proceeding. Our earliest indications of this are, some marked alteration in the form of the wall of the affected hoof in front—some unnatural slope or *falling-in* of it, and this is accompanied by *sinking of the sole;* not to the extent to constitute *pumice*, but still enough to shew that alterations are taking place, in consequence of disease, in the relative situation and connexion of the parts within the hoof. When the effusion is more extensive as well as of a more intense character than this, we perceive indications of mischief going on at the coronet. The coronary body loses its rotund plumpness; becomes flattened and even sunken, and when pressed by the finger has a soft boggy feel, and pits upon pressure, arising from a sero-lymphy effusion into its substance, which the pressure causes to ooze out. This is accompanied by separation of the encircling border of new-formed horn, with its thin wafery edging, from the true skin, with which in health it is continuous and inseparable; and sometimes to such an extent, that the finger insinuated between the coronary border of the hoof and the sensitive parts underneath, on either side, finds a ready passage

to the heel of the foot. All this portends mischief, the next stage being

DISLOCATION OF THE COFFIN-BONE AND BULGING OF THE SOLE; and when this has become an ascertained fact—as the appearance of the sole itself will give unwelcome intelligence of, as well as the sinking or indentation inward of the wall—our hopes may be said all to have merged into despair. The coffin-bone can never be raised again into its place—even though it may not have protruded through the horny sole, which is sometimes the case—the sole never again restored to its normal shape, and therefore the lameness arising from tenderness of foot consequent thereon becomes permanent and irremoveable; notwithstanding there be cases, as we shall find when we come to consider the sub-acute form of the disease, which admit of mitigation so far as to enable the animal to perform certain duties at, for the most part, a slow or walking pace. This is the only consolation left to us. At the same time we must bear in mind, that the protrusion of the coffin-bone through the horny sole is the signal, in most cases, for the destruction of a life which can but eke out its existence in a state of suffering and wretchedness. But, now and then we have, prior to this displacement and disorganization of parts taking place,

SUPPURATION OF THE FOOT. Purulent matter at first makes its appearance in scanty masses, mingled with the serous or sero-albuminous effusion at the coronet. By degrees, pus becomes the predominant secretion; so that what with parts in succession taking on the suppurative action, and the pus itself collecting and gravitating and spreading in every direction, gradually a separation is worked between the sensitive foot and its horny case, until, in the end, the latter, losing all hold and connexion, is *cast*, i. e., is thrown off the foot, the same as a loose shoe is kicked off one of our own feet. Of this, of course, the consequences are grievous in the extreme; at the same time that thereby the case of our poor sufferer is rendered utterly beyond the pale of all remedy and hope, and he himself has become a fit subject only for the knacker's yard.

MORTIFICATION may be expected to ensue in cases wherein the inflammation in the feet assumes a congestive character, and no relief is afforded the over-loaded bloodvessels, either by treatment or otherwise. The swollen tissues of the sensitive foot, with the horny wall opposed to them in front and the coffin-bone behind, can in nowise obtain relief save through pressure upwards towards the coronet; and therefore it is that, unchecked by timely or efficient treatment, or for want of any treatment at all, the distended and compressed tissues fall into mortification. Inflammation continues to rage with unabated violence; suppuration does not fol-

low; there may or may not be changes evident externally around the coronet; nevertheless, pain and fever terribly harass the patient, until, exhausted by his sufferings, he dies of mortification. This has been known to happen so early as the second day, though other cases have run on so late as the fourteenth day, and then so terminated. After death we examine the feet. We find little or no displacement of parts: but we find serous effusion upon the surface; the sensitive laminæ full of blood and almost black, and, with the slightest force that can be used, detaching themselves from their union with the horny lamina. And even the coffin-bone—which was on one occasion, in which the *hind* feet proved gangrenous, sawn through by the late Mr. Field—is found to exhibit "an almost equal degree of blackness*." The peculiar situation of the sensitive laminæ, between the coffin-bone and the hoof, renders them, under high congestive inflammation, very liable to become squeezed, and in a measure strangled, between the two hard substances by which they are fenced; and it is under such circumstances, I repeat, that mortification or gangrene is produced in them; of which the animal sinks rapidly, and dies at last almost unexpectedly, after having suffered days and nights of the intensest pain and agony.

Chronic Laminitis, a form the acute disease will every now and then run into, instead of declaring its termination in one or other of the ways but now pointed out, and whose consequences are different in some important respects from any we have yet examined, will be considered in speaking of sub-acute laminitis.

The Pathology of Laminitis brings some facts before us which, while they are of a different nature from others occurring under similar circumstances in other tissues, are important for us to become acquainted with, from their serving to explain certain phenomena occurring in the course and termination of the disease. It is not only ascertained that all the soft tissues of the foot participate more or less in the inflammation, but it is equally so that the coffin-bone itself, which is perforate in every part for the passage of bloodvessels, likewise partakes of the inflammatory action. Now, by these perforating bloodvessels it is that the secretion of horn is carried on; and since it is a law with secretory organs that under inflammation secretion is either augmented or diminished, or else altogether suppressed, so must we expect the secretion of horn to be in one of these ways affected under laminitis. At first, or during such time as inflammation is just beginning or moderately prevailing, or indeed at the time that the inflammation is on the decline, the secretion of horn may become augmented; but when, as in acute laminitis, inflammation runs

* Posthumous Extracts from his Veterinary Records, p. 200.

fearfully high, the secretion of horn becomes stopped; the secreting vessels oozing forth in lieu thereof serous fluid or coagulable lymph. The effect of this is—as well from the want of the adhesive cement of the new horn, as from the interposition between them of serum and coagulable lymph, or of pus—disunion and separation of the sensitive and horny laminæ, and consequent disconnexion, and dislocation backward and downward, of the coffin-bone. Such a termination as this it is that is to be dreaded in every attack of laminitis; for, once let displacement of the coffin-bone take place, and the horse, if not rendered thereby entirely useless, becomes certainly valueless for any purpose for which a sound horse is required. This it is that renders it of the utmost consequence that our treatment of a seizure with acute laminitis should be of that prompt and energetic description which is the most likely to check or subdue the disease at once; for if this chance be suffered to go by without being taken due advantage of at the moment, our sufferer is as surely lost to all likelihood, if not of life, of after soundness and serviceability, as though we had from the beginning left him to his fate or put a pistol to his head.

THE PROGNOSIS of a disease so frequently destructive of life, or of that which makes life supportable, as acute laminitis, ought to be given with great caution and consideration. Supposing we are called in to attend the sufferer from the very beginning of his ailments, when asked the question as to his probable fate—which we are sure to be—it must be represented by us, that no opinion can be ventured thereon in this incipient stage. But should our calling in be late—not until symptoms be making their appearance denotive of an unfavourable termination, such as separation of the laminæ, sinking of the sole, suppuration, &c.; or should the symptoms be raging with unabated violence, and the period for a crisis—the third or fourth day—be past; we may not hesitate to pronounce unfavourably of the case. In fact, when the sufferings of the patient are extreme, and from every appearance the case must terminate in death either from irritation or mortification, or in such disorganization of the component parts of the foot as must inevitably render the horse a cripple for life, it often becomes an act both of humanity and expediency to slaughter or shoot him. For even should he, poor creature! last out all his agony and trouble, he survives but to become, for the end of his days, an useless, or almost an useless, and consequently unprofitable, servant to his master.

THE TREATMENT OF ACUTE LAMINITIS, undertaken with impressions on the prescriber's mind such as have been just depicted, will not lack either promptitude of action or boldness and decision of purpose. The patient stands before us loudly

calling by his plaints for relief, and we feel conscious in our own mind, that, unless we can and do relieve him early and effectually, either his life or his limbs must pay the forfeit. In setting about his treatment a good deal must depend, as to the immediate steps to be taken, on the stage of disease we find the patient in. If it be possible to move him from the situation he is in—supposing that to be an unfit one for him—a roomy loose box where persons can get readily at and about him, and he himself can lie down and stretch himself out at full length, is, beyond all others, the best place. We may also have in mind, should we have any choice of abode for him, that it is possible we may have a desire at some stage of his illness to put him into slings; though, for my own part, I cannot say I have ever experienced decided benefit, or any but temporary relief, from such a proceeding. The next thing to be done is, if practicable, to take the shoes off the inflamed feet, in order to relieve them from all constriction. I say, "if practicable;" because every now and then, when the patient is standing, the pain of bearing the weight upon one foot while the opposite one is being lifted up by the farrier is so insupportable, that he is unable to continue it even long enough to have his shoe wrenched off. Under these circumstances, some practitioners advise that the shoes be left on: indeed, some there are that consider such an act as unshoeing either as quite unnecessary or positively injurious. One point in the matter is certain, and that is, if the shoes are to be taken off, it ought to be done at the very commencement of the attack, since the difficulty will be certain to increase the longer the operation be deferred.

And when the shoes are being moved is the time to have the clefts of the frogs pared out to receive the setons I am going to propose; also, to have the soles of the hoofs pared out and thinned, as well as we are able: though even here different practices prevail; since some persons contend that the soles should be *left strong*, whereby they say the coffin-bone is maintained in its place. This to me, however, is taking an erroneous view of the pathology of the case. For the detachment of the coffin-bone does not depend upon want of support from below—though it is possible such may delay for a time its actual descent; yet must the descent of the bone necessarily follow the separation of the sensitive from the horny laminæ, nor can any thickness of sole prevent this, together with the ultimate bulge of its own body. D'Arboval recommends that the shoes the horse is wearing at the time of attack be taken off, but that they be tacked on again with four nails unrivetted, or be replaced by others of a lighter description should they be heavy or clumsy; alleging that by so doing he relieves the foot from all compression, and enables the horse to walk and stand, which he

cannot with any ease do without shoes, and on that account is mostly found lying down. The sole, he adds, is so sensible in laminitis that it requires protection from pressure; and pressure does not pain when confined to the border of the wall. A serious objection, in my mind, to this practice is the hammering of feet in a state of inflammation, to say nothing of the known difficulty, in most cases, of shoeing the animal in such a condition.

Whether the shoes be taken off or not—and, for my own part, I am in favour of their removal—the next step in the treatment to be taken is, in my opinion, the insertion of *frog-setons*. In short, I am, after no little experience in the matter, most decidedly an espouser of the plan of treatment so strongly recommended and deservedly extolled by Mr. Gabriel, in an admirable paper he sent to THE VETERINARIAN on the subject in the year 1844*. The strong language used on that occasion, and which I do not think that gentleman has since had any reason to alter or retract, is in itself so expressive that I shall take the liberty here to transcribe it:—"The first and the only anxiety I have, on being called to a case of laminitis, is to ascertain whether or not disorganization has commenced: if it has, why then, of course, the mischief is irremediable; but if it has not,—and such will generally be the case, for the urgency of the symptoms is too great to allow of any neglect,—why, then, I feel perfectly easy as to the result, and I do not hesitate to predicate a favourable prognosis to the owner. I am now speaking of those cases in which the fore feet alone are affected, never having had one in which the hind feet, or all four, were suffering, under my own immediate care."

Mr. Gabriel goes on to inform us—"My first step, without the slightest loss of time or waiting for any thing like preparation, is to give a full dose of physic—seven, eight, or nine drachms of Barbadoes aloes, as may be required—and then to put on the hobbles, and immediately *insert a seton through each frog;* thereby applying the safety-valves, which regulate the course of the disease. As soon as the patient is released, and has a little rallied from his punishment, I have recourse to a copious venesection from the jugular vein. Having noticed the state of the animal's condition, I place my finger on the pulse, and care not what quantity is taken, till it begins to falter; but, having produced that effect, I stop. It may be, that the abstraction of one, two, or three gallons is requisite to produce this impression; but this impression I will have produced, and some intermediate quantity of the amount named will most generally do it. I then have his feet enveloped in large tepid bran poultices, order him to be comfortably clothed, to have plenty of chilled water and slop mashes, and then I consider he is

* VETERINARIAN, vol. xvii, p. 142, et sequent.

fairly started on the high road to safety. Should the symptoms become more urgent, bleed largely again the next day; and should not the physic be operating in twenty-four hours, lose no time, but go on with smaller doses till their full effect is produced: fever medicine may then be substituted, and given two or three times a day. Within twenty-four or thirty-six, or say, if you will, forty-eight hours, his physic will be operating and his setons discharging; and having produced these effects, you have as effectually secured your patient against separation of the laminæ and sinking of the soles as if no disease whatever had existed. Nothing can be more pleasant than the feeling of confidence with which each morning, when the poultices are being changed and the setons dressed, you tell the groom to pick out his feet and examine his soles. 'All right, sir.' 'What! no dropping?' 'Not a bit of it, sir,' is the certain reply.—In the course of five or six days, if the case is progressing favourably, leave off your poultices, and have the feet stopped up—supposing the shoes to be on—dressing your setons daily for ten days or a fortnight. A striking peculiarity in the discharge from the setons, occasionally, is its extreme fetid character. Imagine the worst thrush you ever put your nose near; it is a perfect nosegay to this discharge."

We have but one or two suggestions to make touching these excellent directions. The "*full* dose of physic" directed to be given at once, and without "any thing like preparation," is absolutely necessary from the circumstance of the patient being unable to take exercise to work it off, and from the consequence it is to his future welfare that *full* purgation should become as early as possible established. Mr. Gabriel bleeds from the jugular vein. Would not the plat veins be preferable, as affording, in some measure, a topical as well as constitutional depletion? Mr. Castley mentions a case in which he opened "both cephalic (plat) veins at the same time." After the loss of seven or eight, or perhaps more, quarts of blood, coming rapidly away, the horse began to break out in a sweat, breathe hard and stagger. He was standing in a warm bath, out of which he was immediately taken and pinned up. "Next morning the animal was found standing upon his feet, apparently free from pain; and he got rapidly well again*." The poultices should be applied as hot as can be borne; and instead of being composed of bran only, are sometimes made up in part of linseed meal, which makes them more retentive of heat and moisture. Mr. Gloag has informed me, he uses with excellent effect boiled linseed and turnips mashed together. Whatever ingredient be employed, it is advisable to wet the poultices from time to time by dipping them in hot water or pouring the water over

* Veterinarian, vol. iii, p. 203.

them. But I recommend that fresh poultices be applied every morning and evening. The pediluvium or warm bath, as recommended by D'Arboval and some others, is almost impracticable should the horse be lying, and often very troublesome when he is standing, and, after all, not so effectual as poultices. If warm water is to be applied, the spongio-piline would afford the best medium for it.

Theorise and reason upon this mode of treatment as we will—and there is much in theory to be said for it, and something to be said against it—I am bound, by the results of my own trials of it, unhesitatingly to declare myself in its favour. In some cases it has seemed to work wonders; but to this I feel myself constrained to add, in others it has as signally failed. Still, I have been vastly more successful practising Mr. Gabriel's treatment than with any other plan I have been urged to adopt; and therefore I have, *quoad hoc*, every reason to be pleased and satisfied with it. Not that we are to feel ourselves precluded by it from introducing portions of any other practices in the treatment to which authority or experience has lent its recommendations, should we deem any such to be called for.

In the cases in which disappointment has attended such treatment, I have often observed that the setons have failed to produce the suppurative action usually consequent on their employment. Instead of being soiled with purulent matter, emitting the offensive odour so strongly remarked on by Mr. Gabriel, they have remained dry and odourless. There seemed too high or too extensive inflammation to permit the secretion of pus; and it became a question, under such circumstances, whether, instead of proving beneficial, our setons had not been productive of harm by creating fresh irritation and inducing more blood to the foot, and thereby adding to that—viz., the inflammation—of which there existed already too much? In such a case as this, and especially when we have already drawn blood from the system to the extent that we dare do, we naturally look after some local abstraction of blood from the feet. And then the question arises, whether the punctures inflicted on parts in a state of inflammation to draw blood, do not tend to irritate and aggravate more than the frog-setons; considering that the one is run through parts away from the immediate seat of the inflammation, while the other penetrates the inflamed tissues themselves. Added to which, the wound we inflict at the toe of the foot is itself extremely likely to run into the suppurative action, and so may dispose the laminæ to the same process; an event, of all others, most to be guarded against. Mr. Castley, when he was serving in the peninsular campaign, found that, although he could relieve cases of laminitis, in the first

instance, by bleeding at the toe, "yet in the warm climate of Portugal, I (he says) was liable to lose my patient, afterwards in consequence of the wound that I had made in the foot. *Suppuration was apt to take place in the sole;* secondary inflammation would be set up; and this would be followed by tumefaction, burrowing up and bursting all round the coronet; and then the game was lost. (The consequence being, the casting of the hoof.) I therefore abandoned the foot altogether, and began to bleed higher up." D'Arboval strongly expresses his fears that the toe yields *trop peu de sang* to directly relieve the sanguiferous system of the foot: such, however, can only arise from imperfect operation.

Those who object to stabbing the inflamed tissues may open the pastern veins, or, as D'Arboval suggests, in case swelling should oppose this, they may open the superficial coronary artery in front of the coronet. I have often myself had recourse to the plat vein, choosing this vessel in preference to the jugular; and through it have been enabled to make an impression on the foot at the same time that I made an impression on the system, selecting that limb for the operation which appeared in the greatest pain. Sometimes a good deal of blood is drawn by the punctures of the setons, and when such is the case there will, of course, be less necessity for seeking for other sources of local blood-letting. Should the coronets be hot and painful, D'Arboval advises that they be freely scarified, the scarifications being made in the direction of the axis of the limb, and the bleeding encouraged as much as possible by immersion of the feet in warm water, or in poultices. This I regard as a practice likely to prove in urgent cases highly beneficial. Should there be any apprehension of too much blood being lost, the feet, he says, may be plunged into cold water.

In lieu of the mode of treatment which I have been here recommending, by some veterinarians a totally opposite course is pursued. Instead of warm and soothing applications, they make use of cold and repellent ones; they endeavour to repel or drive away the inflammation, alleging that the treatment adopted by us has a tendency to induce the suppurative action, the very thing it is our duty to avoid. For this purpose, constant supplies of the coldest water, tying the horse up in a stream of water, applications of pounded ice or snow to the feet, should either be attainable, &c., are various methods in practice for the agency of cold; and, no doubt, they have in many cases proved effectual; though, in my opinion, they are not a class of remedies to be adopted for choice, but only under circumstances of convenience or necessity. I have, before now, all but benumbed and paralysed the feet by the use of ice; but without that beneficial effect which, considering our grand object to be resolution, some might expect from it: nay, indeed,

sometimes I have felt quite convinced that such extreme cold has provoked mortification.

After we have drawn as much blood as we dare from the system, and have followed that up by topical blood-letting; and after the physic has worked well, and we have paid all due attention to the setons with the warm applications, or to the cold practice without setons, to the feet, and still the animal continues suffering keenly and cruelly, we are induced to make trial of another class of remedies, to endeavour to assuage or stifle the poor sufferer's pains. Some practitioners—among whom, as we have seen, stands Mr. Gabriel—succeed the copious evacuation of the bowels by *fever medicine;* others have recourse to *narcotics*. I must confess, my own experience in this part of the treatment has not yielded much in favour of either of these modes of allaying fever and pain. Feeling that the source and seat of pain is the foot, I have been in the habit of directing my therapeutic measures to the relief of that, with but little regard —perhaps not so much as I ought to have had—for the nervous commotion and sympathetic suffering set up in the system. I therefore hear with pleasure practitioners asserting, that ether and opium and belladonna are so many useful remedies for this purpose, and therefore ought to be used at this stage of our proceedings. Ether may be exhibited as the common fever drink; and digitalis may be given with nitre, &c., with similar febrifuge intentions; though, for my own part, I should have more reliance upon the former than the latter remedy. If I gave opium, I would administer it in a solid form and in full doses, say a couple of drachms or more, once or twice in the course of the twenty-four hours. Belladonna is a great favourite with some veterinarians of the modern school. The extract, they tell us, may be exhibited in one or two-drachm doses two or three times a-day with signal advantage.

In regard to any further applications to the feet, so long as the disease continues to advance or remains painful, we must persist in the use of such means—in particular of the poultices—as will be most likely to create and encourage discharge from the setons; which must, as directed by Mr. Gabriel, be kept running for some days after even the poultices have been discontinued. Should the case—as is likely to happen—at this period run into a chronic form, topical remedies of another class may be called for, besides attention to the feet, to the shoes, &c., all which will come under notice when *sub-acute* laminitis shall be considered.

In January 1837, Professor Ferdinando de Nanzio, Director of the Veterinary College at Naples, who was at the time on a visit to this country, laid before the Veterinary Medical Association, at our Veterinary College, a paper on the subject before us, develop-

ing a novel, and what appeared in my eyes a strange, plan of treatment for laminitis; a plan, indeed, which entertaining notions such as in these pages have been laid down, could be viewed at the time by me in no other light than as the unseemly and incongruous application of the mechanical art to veterinary therapeutics; nor has trial of it by me been followed by such results as to serve to bring it, in my mind, anywise into favour. However, it is not my desire, by any pre-expressed opinions of my own, to throw cold water on that which the Professor himself has described in such terms of confidence and commendation as to leave little doubt but many others besides myself have put the "new method" to the test. I shall therefore submit his paper, entire, to my readers in the translated form in which I find it in THE VETERINARIAN*.

PROFESSOR DE NANZIO'S "NEW METHOD OF CURE" is, in that volume, introduced to our notice and described as follows:—

"Inflammation of the laminæ is a disease very common among Neapolitan horses. It is inflammation of the reticular tissue of the foot, called by Professor Vatel *podophyllite*.

"In this disease it is absolutely necessary to procure *resolution*, because the other terminations are more or less destructive of the future health and utility of the foot. The reticular tissue is here engorged, and has a tendency still more to dilate—phenomena which are observable in every vascular inflammation, when there is augmentation of the volume of the part.

"The reticular tissue of the foot, finding itself compressed between the crust and the bone of the foot, can be dilated only towards the coronet, or more frequently towards the sole. In these parts we observe suppurations, infiltrations, &c., which often compel us to abandon the treatment of the disease, and to destroy the animal.

"In this inflammation, cold baths, bleeding, and all other known means of cure, usually fail in producing resolution.

"Having constantly observed that horses affected with this malady are, to a certain degree, relieved, every time they are shod; and do better when they are made to stand on hard pavement, and without straw, than when they are treated in an opposite way, I was led to make use of very strong compression of the hoof. As soon as a horse is attacked with this disease, I put on him a flat-soled shoe, fastened with four or five nails. Before fixing this plate, and in order that the pressure may bear on the whole of the surface, I cause every part of the space between it and the sole to be perfectly filled with pledgets of tow dipped in equal parts of vinegar and water.

* Vol. x, at page 68-9 of the Proceedings of the Veterinary Medical Association.

"The plate, which is bent upwards posteriorly, has two holes in the curved portion, which serve for the attachment of a band that surrounds the coronet, and compresses it strongly in every part, and somewhat above and below it. I maintain a low diet, apply cold lotions, and I bleed whenever the inflammation becomes intense. After some days the animal is usually perfectly cured, and the covering of the foot may be removed.

"This compression may also be used after bleeding at the toe. I have nothing more to do than to recommend this method of treatment, which I have employed during many years, and always with the happiest results. It also proves the great success which might be obtained from the use of compression in the treatment of a crowd of enlargements of this nature.

"In the course of the debate it was elicited from the Professor, that he never touched the bottom of the foot with a knife—that the object of the encircling of the coronet with a band was to compress the bloodvessels, and cut off, as much as possible, the access of arterial blood to the foot—that usually a cure was effected in seven or eight days, and that in very few cases was it necessary to continue the compression until the fourteenth day. The horse, from the time of the application of the bandage, exhibited little or no pain, and walked in the usual manner. He confessed that he should not have recourse to this mode of treatment in cases of pumiced foot, nor when there was a metastasis of inflammation from some other part to the foot. It was principally advisable at the commencement of the inflammation of the foot.

"He considered the two chief causes of inflammation of the foot to be of a totally opposite nature; it was the consequence of excessive work, and of standing too long in the stable and then being suddenly put to hard work. It frequently attacked the feet of horses after a long voyage, and it was often the result of bad shoeing. He usually bled from the toe; and in bad cases he always bled before the application of the compress. After this bleeding he turned the animal out, if convenient, into a pasture bearing long and damp grass, or he kept the foot wet with water. On other occasions, and in paring out the foot, he used the same kind of drawing-knife that is so much in request in England."

[To be continued.]

DISEASE OF THE MESENTERIC GLANDS, ACCOMPANIED WITH ENLARGEMENT OF THE LIVER.

By R. L. HUNT, *V.S., Edgebaston, Birmingham.*

[For the subjoined interesting case we are indebted to Mr. Daws, of Gresse-street, London.]

THE following is a case of rather unusual occurrence; of which, not having met with one precisely similar, or having seen one recorded, I take the liberty of forwarding you the particulars:—

The subject was a bay four-years-old colt, about fifteen hands high, by a thorough-bred horse out of a half-bred mare, the property of a gentleman in this neighbourhood, who bred him. My attention was drawn to him for the first time on the 17th of April in this year. I found him exhibiting symptoms of debility, with a long unhealthy-looking coat; considerable poverty of condition, hollow eye, and low spirits: he was then in a good pasture with other colts that were doing well, having corn daily, which he ate with a good appetite. It being the opinion of the persons who had the care of him that he had worms, a mild dose of physic was given, and treatment accordingly. He was again turned out after about three weeks, during which time he had vegetable and mineral tonics administered, his appetite still continuing good; and I was in hopes that the supply of new grass would restore him to his wonted condition.

He did not again come under my observation until August 14, when I found him much reduced in condition, even from the state I saw him in in April last. He had been at grass in the park of his owner during the time, with abundance of keep; but had been so irritated with the flies, that he had lacerated the cornea of both eyes by rubbing his head against the trees to rid himself of those insects, as well as producing wounds in other parts of his body by the same means.

On the 15th of August he was admitted into my infirmary. I found the mucous membrane of the mouth, nose, and eye, much congested, assuming a purple hue; the pulse regular, but rather full, beating 40 in the minute; his appetite good; and his fæces regular in quantity, and healthy in appearance. After preparing him with bran mashes (which he ate voraciously), I administered aloes Barb. ʒiv, hyd. chlor. ʒj, but without effect. I repeated two-drachm doses of aloes until he had taken ʒx, when a slightly laxative effect was produced; and as soon as that had subsided, I exhibited vegetable tonics, viz. gentian. and zingib. in two-drachm doses of each

daily, with liberal diet, and a loose airy box, with a good bed, and particular attention to his comforts. I then added ferri or cupri sulph. 3j to each ball, and under this treatment he seemed to slightly improve; the wounds on his body healed, and the opaque appearance of the eye produced by the injuries to the cornea becamed absorbed; his conjunctival and Schneiderian membranes improved in colour, and his coat bore a more glossy aspect. His appetite being somewhat impaired, on August 28th I discontinued the tonics, and gave a laxative and diuretic composed of aloes Barb., tereb. vulg. āā 3j, hyd. chlor. 3j, which produced a most active purging effect. The tonic system was again had recourse to, varying the agents, as circumstances dictated, with occasional laxatives and calomel. In lieu of improving, the colt gradually became worse; and by this time was so emaciated, notwithstanding his voracious appetite (eating four feeds of oats and beans daily), that it was with difficulty he could raise himself when once down. The membranes had again assumed their congested appearance; the pulse 60, and irritable; his urine scanty and thick; but his bowels still acting regularly, and quite normal in appearance. The hocks and hind legs becoming œdematous, and the joints of his fore legs also much enlarged, at the latter end of September I addressed the proprietor, stating that my opinion was that the case was one of either diseased mesenteric glands or chronic disease of the liver, and I thought further treatment useless.

On October 4, at my suggestion, he was destroyed by bleeding, and at the post-mortem examination the following appearances presented themselves:—On removing the skin from the lower part of the abdomen and extremities, a small deposition of serum had taken place, the cellular membrane having assumed a dirty brown colour, mingled with patches of dark-coloured blood. On opening the abdomen, the peritoneum exhibited symptoms of previous inflammation. About three pints of serum escaped from the cavity, and the membrane was in some places covered with flocculi, and in one place adhesion of the omentum had taken place. In that membrane (the omentum) several glandular-shaped substances existed, varying from the size of a pea to a small walnut; and on being cut open, some contained white earthy matters, and others a firm yellow or orange-coloured substance similar to inspissated pus.

The whole of the mesenteric glands exhibited extensive disease, being much enlarged, and in some instances lying embedded in serum of a bright straw colour and of a tenacious or jelly-like consistency, which was extravasated between the peritoneal and muscular coat of the intestines. The glands, when cut into, were the colour of clay, and one or two drops of serum escaped. The mesenteric veins presented a singular and pleasing appearance.

They could be traced out through their convolutions of the most beautiful bright amber colour, and, pursuing their course, discharging themselves into the vena porta, which, on being cut through to disengage the stomach and spleen from the liver, exhibited the same peculiar semi-fluid issuing from its divided end.

The liver, which was in my opinion secondarily affected, was enormously large, weighing thirty-four pounds, and seemed to be so entirely changed as not to possess one original quality either in aspect or function. It was much indurated, and firmer in texture. The parenchyma of a deep olive colour, variegated by small irregularly-shaped black spots throughout the whole substance, and reminding me much of the marks and colour of a toad's back. It resisted the knife considerably, but, when divided, the marble-like structure, glistening with this crystalline serum issuing from each vessel, produced a most beautiful effect.

The other abdominal viscera were healthy, and the heart was slightly pale.

I had the satisfaction of proving the truth of my prognosis by this examination; but, alas! after all, I fear that we are as much at a loss for a remedy for this insidious disease as ever.

THE NEW OPERATION OF TENOTOMY.

By W. Cooper, *M.R.C.V.S., Berkhampstead.*

In the June number of this year's Veterinarian, you have a communication from me upon the subject of tenotomy, wherein I respectfully reminded you that the disease of the metacarpal ligament was a frequent cause of distorted limb; at the same time I related a case in point, in which a division of that ligament was followed by the best results, and suggested that (in cases where this ligament was the especial seat of disease) the section may be confined to it alone, leaving the tendons untouched. In your editorial remarks you acknowledged those hints with candour, and in terms calculated to inspire further inquiry. Since then, I have forwarded you a specimen of the diseased state to which I have referred; and, in the private letter you honoured me with, you state that the specimen "contains most indisputable evidence of thickening, enlargement, and adhesion of the metacarpal ligament, and proves that to have been the cause of the contracted sinews." I may further add, that the subject of this notice had no other apparent alteration of structure in either muscle or sinew in any part of the limb.

The views I have taken, and which you corroborate, will ere long be adopted by the profession at large, in defiance of the mere theoretical deductions advanced by Mr. Varnell in the last number of the *Veterinary Record*. That gentleman considers it strange that I should venture to operate on a part contributing to the formation of a bursal cavity, or, in plain words, so high up the leg. My answer is, that I did so not from choice but necessity, it being my invariable custom to operate above any tumefaction consequent upon disease or former operation, should such be situated at the usual point of section. I do so in preference to cutting through any diseased mass; and if I open a bursal cavity, as a matter of course my after treatment is regulated accordingly. I may further adduce the entire controul we exercise over the motions of the knee joint, which enables us to contend successfully with opened bursæ of this part, even when attended with lacerated and extensive orifices, and, in all probability, neglected cases into the bargain. Such being an admitted fact, surely, we have a far better chance of success, in cases diametrically opposite, where the orifice is small, the incision clean, and attended to forthwith. This is the whole secret of the success which we know has attended those who have performed the simple operation of tenotomy, without any particular pretensions to science, either in an anatomical or pathological point of view.

Enough of this subject for the present, and

I remain, Sir,

Your's respectfully.

W. Percivall, Esq.

GUTTA PERCHA A SUBSTITUTE FOR LEATHERN SOLES.

By the same.

Mr. Editor,—In directing your attention to that singular vegetable production called gutta percha as a substitute for leather soles for horses' feet, allow me first to state, that I am aware a letter has already appeared upon the subject from Dr. Gill, of Stepney. Having been anticipated by that gentleman, I shall be very brief in my remarks; otherwise, I should have given you fuller particulars of the results of some experiments I have been trying for several months past, and of which some of my acquaintance have been aware.

The roads in this immediate neighbourhood being repaired entirely with flints, a great many horses are consequently shod with

leather soles, simply as a protection against these things, which when first broken are as sharp as glass itself. For this purpose leather soles answer well, and will, of course, continue to be used with some description of feet: still, on the score of economy, and as a simple protection to the sole of the foot, I have every reason to think they will, in a great measure, be superseded by gutta percha. It was in the early part of the present year that I first began trying this article upon the feet of my own horse, which I have driven with it ever since; and, finding that it answered admirably, I recommended its adoption in several places; so that it has now got into rather extensive use about here, and appears to give satisfaction to all, except a certain class, who, for obvious reasons, adhere to the old proverb, that "there's nothing like leather." I use the article in a manner somewhat similar to Dr. Gill's description.

Cut from a sheet of gutta percha a piece adapted to the size of the foot, soften it sufficiently in hot water, so that with the thumb it can be moulded nicely into the sole and different hollows of the foot (*after* the shoe is put on), then with an old knife press it under the edge of the shoe, this being all that is requisite to secure it. The horse should then stand on a smooth surface for a few minutes, when the gutta percha will have acquired its original firmness. The quantity I use is sufficient to form a substance equal to that of a leather sole; but instead of making a smooth ground surface, I mould it well into the commissures and cleft of the frog, so as to resemble, in a great measure, the surface of the horny sole itself. By so doing, stability is given to the tread, a neat appearance is also presented, and it fits so closely that but little dirt works underneath. I use the gutta percha without the ordinary tar-stopping, and without removing it oftener than the shoes; and the effect it has upon the foot is quite different to what I had anticipated. All my fears were dispelled upon putting it to the test. For durability, and consequent economy, leather soles bear no comparison whatever, as the same gutta percha will do over and over again, if softened afresh by immersion in hot water.

I give in London two shillings per pound for gutta percha in the sheet, and I am informed that the old (or that which gets flaky, as it will do by wear) sells for nearly half its original cost, to be worked up afresh by the manufacturer; so that this singular article appears to be almost indestructible.

I am, Sir,
Your's respectfully.

REVIEW.

Quid sit pulchrum, quid turpe, quid utile, quid non.—Hor.

On the prevailing Epizootic in Cattle, called Pleuro-Pneumonia. *By* Finlay Dun, Junior. Edinburgh. (Premium, Gold Medal.)

[Continued from page 586.]

We feel much pleasure in resuming our extracts from this clever performance; which it is our intention, on the present as on the former occasion, to make as lengthy as our space will permit us to do; and having done so, we shall conclude with a remark or two touching the prominent points of the subject of them, comparing, as we go along, the opinions thereon contained in the pamphlet before us with those pre-expressed on the same points by Mr. Waters*; in the hope that, on a disease which has proved the source of so much loss of property to the agriculturist, and of so great concern to the veterinarian, we may be able to elicit some facts which may be useful as beacons to direct those on their way who may hereafter have to steer their course through a department of veterinary therapeutics, the labourers in which have hitherto discovered but little that has turned to any useful or satisfactory account.

"The primary symptoms of pleuro-pneumonia are generally obscure, and too often excite but little attention or anxiety. As the disease steals on, the animal becomes dull and dejected, and, if in the field, separates itself from its fellows. It becomes uneasy, ceases to ruminate, and the respirations are a little accelerated. If it be a milk-cow, the lacteal secretion is diminished, and the udder is hot and tender. The eyes are dull, the head is lowered, the nose protruded, and the nostrils expanded. The urine generally becomes scanty and high-coloured. It is seldom thought that much is the matter with an animal until it *ceases* to *eat;* but this criterion does not hold good in most cases of pleuro-pneumonia, for the animal at the outset of this disease still takes its food, and con-

* Given in the numbers of our Journal for June, July, and September, of the present year.

tinues to do so until the blood becomes impoverished and *poisoned:* it is *then* that the system becomes deranged, the digestive process impaired, and fever established. The skin adheres to the ribs, and there is tenderness along the spine. Manipulation of the trachea, and percussion applied to the sides, cause the animal to evince pain. Although the beast may have been ill only three days, the number of pulsations is generally about seventy per minute; but they are sometimes eighty, and even more. In the first stage, the artery feels full and large under the finger; but as the disease runs on, the pulse rapidly becomes smaller, quicker, and more oppressed. The breathing is laboured, and goes on accelerating as the local inflammation increases. The fore extremities are planted wide apart, with the elbows turned out in order to arch the ribs, and form fixed points for the action of those muscles which the animal brings into operation to assist the respiratory process. In pleuro-pneumonia, the hot stage of fever is never of long duration. The state of collapse quickly ensues, when the surface-heat again decreases, and the pulse becomes small and less distinct. We have now that low typhoid fever so much to be dreaded, and which characterises pleuro-pneumonia in common with other epizootics.

Auscultation, when directed towards the situation of the inflamed spots, fails to perceive the low rustling murmur of the healthy lungs, and detects a crepitating râle, which, as the case advances towards an unfavourable termination, becomes duller, and at last is altogether inaudible. Percussion indicates a dull deadness of sound, which the experienced ear cannot fail to distinguish from the clear, free resonance of the healthy lung.

The horse labouring under pleuro-pneumonia, or, indeed, any pulmonary disease, will not lie down; but, in the same circumstances, cattle do so as readily as in health. They do not, however, lie upon their side, but couch upon the sternum, which is broad and flat, and covered by a quantity of fibro-cellular substance, which serves as a cushion; while the articulation between the lower extremities of the ribs and their cartilages admits of lateral expansion of the thorax. In this position cattle generally lie towards the side principally affected, thus relieving the sounder side, and enabling it to act more freely. There is sometimes a shivering and general tremor, which may exist throughout the whole course of the disease. This seems to be dependent upon the impurity of the blood, its unequal distribution, its collecting around the internal organs, and its ceasing to be duly circulated through the capillaries of the skin. These chills and rigors do not necessarily prove the presence of inflammation, but merely shew a tendency to it: they are entirely different from the general coldness of the surface usually apparent in the latter stages of the disease.

As the case advances in severity, and runs on to an unfavourable termination, the pulse loses its strength and becomes quicker. Respiration is in most cases attended by a grunt at the commencement of expiration, a symptom, however, not observable in the horse. The expired air is cold, and of a *noisome odour*. The animal crouches. There is sometimes an apparent knuckling over at the fetlocks, caused by pain in the joints. This symptom is mostly observable in cases in which the pleuræ and pericardium are affected. The animal grinds its teeth. The appetite has now entirely failed, and the emaciation becomes extreme. The muscles, especially those employed in respiration, become wasted, and the shoulders and elbows unnaturally prominent from the shrinking of their investing muscles, and from being constantly kept out to increase the width of the chest. The belly is tucked up, and the flanks heave. The oppressive uneasiness is excessive, the strength fails under the violent and convulsive efforts attendant upon respiration, and the poor animal dies *asphyxiated.*

* * *

"POST-MORTEM EXAMINATIONS are very important in enabling us more clearly to understand the nature and symptoms of disease, and to verify or correct our prognosis of the cases that come under our notice.

"In conducting the post-mortem examinations of animals that have died during the first stages of pleuro-pneumonia, it is of importance to take into consideration the side towards which the animal lay previous to death, especially if, before the blood be coagulated, the carcass be allowed to remain long in the same position; for if such has been the case, the gravitation of the blood towards the lower side may produce a state of congestion which will render it very difficult to judge of the relative state of the lungs previous to death.

"In cases of pleuro-pneumonia, the post-mortem appearances are very various; in the majority of cases, however, the right lung shews the disease in its more advanced and worst forms. The lower parts of the lung, to which the blood gravitates, and whence it flows less easily to the heart than it does near the large vessels, seem to be always first affected. In the same animal, the lungs frequently shew all the different stages of the disease; the more dependent parts being perfectly hepatised, others exhibiting effusion of serum and lymph, while in others we find the state of pure engorgement.

"When the animal dies in the first stages of the disease, the lungs are congested, black, and easily broken up; and, when cut into, blood and frothy mucus flow from them. When large portions of the lungs are found in this state, we may surmise that the

disease has quickly run its course, and that death has been somewhat sudden. But when the disease is protracted, there is always more or less hepatisation, adhesive matter being effused into the cellular connecting substance: the lungs are thus blocked up; the action of the air is prevented; abscesses may be formed; and the lung becomes a mottled indurated mass, easily torn, but so solid and heavy as to sink in water.

"The lining membrane of the bronchi is more or less injected, and the mucous secretion is very abundant.

"The extensive pleural adhesions which so many cases of pleuro-pneumonia exhibit, and which are regarded as strictly diseased conditions, result from an effort of nature to prevent the friction caused by the contact of the inflamed surfaces. Serum is thrown out, and lymph and albumen deposited; which becoming coagulated, the flocculi arrange themselves in layers, and are streaked with pink lines, or interspersed with red patches, caused by the colouring matter of the blood. These layers are more vascular and red nearest to the ribs and the lungs. A serous or albuminous deposit may be re-absorbed, but lymph becomes organised, and those morbid adhesions ensue which no treatment can remove. Where a great accumulation of organised lymph has taken place, the lung, although not of itself having been the seat of inflammation, becomes compressed, loses its elasticity, its light spongy appearance, and seems in its structure more to resemble muscle than lung. From the adhesion and subsequent separation of their surfaces, the pleuræ are sometimes found rough, and studded with small points. Serous effusion within the cavity of the chest results from the increased action of the pleural vessels, and many gallons of water are thus poured out. Sometimes the fluid is albuminous, and sometimes it contains pus.

" By sympathetic action, all the serous membranes are more or less affected. The pericardium sometimes contains as much as a gallon of serum. Its visceral and parietal layers may, like the pleural surfaces, be adherent, and covered with deposits of lymph and albumen.

" The substance of the heart may participate in the disease, but such cases are exceedingly rare. The cavities of the organ, however, are generally filled with dark grumous blood.

" The bronchial glands are sometimes in a state of suppuration.

"In some cases the liver is entirely disorganised, and the bile thickened and dark-coloured.

"The third stomach will sometimes be found distended with dry hardened food, which is caked on the surface of its leaves. This condition depends upon the disordered state of the digestive system, and the rapid absorption of the more fluid contents of the

stomach. It is found to a greater or less extent in all inflammatory affections of cattle.

"The bowels are sometimes much inflamed, especially if large quantities of purgative medicine have been given. This, however, is not a metastasis, but an extension of the inflammation."

Although nobody pretends to deny the general resemblance between pleuro-pneumonia in cattle and the disease which goes by the same, or some similar name, in horses, yet are there certain points of difference in the two maladies which would induce us to believe their natures or essences to be distinct. One of the most striking of these is the contagious property of the one and the non-contagious nature of the other. In cattle pleuro-pneumonia Mr. Dun unhesitatingly declares for contagion. "As much difference of opinion exists on this subject (causation), it cannot be denied," he says, "that CONTAGION is a most active cause in the diffusion of the disease." And in another place he adds,—"Not only were the earlier cases which occurred in this island distinctly proved to have arisen from contact with the Irish droves, but also subsequent cases, even up to the present day, shew numerous examples *in which contagion is clearly and unequivocally traceable.*" Mr. Waters, although he does not speak in the same confident terms as Mr. Dun, still very satisfactorily admits the fact of the disease being contagious. "A reference to our cases in general, but to Cases 14, 15, 18, 22, and 29, in particular, will, we think, satisfactorily shew that it is chiefly due to the introduction of drifted cattle to home stock; and the fact of the latter, which were previously in good health, becoming affected after being brought into communication with the drifted or diseased cattle, *establishes in our mind the proof,* THAT THE DISEASE IS INFECTIOUS." Now, that we have a disease common among horses resembling in its symptoms and post-mortem relics pleuro-pneumonia in cattle, is, on all sides, acknowledged; but that such disease is *contagious* in horses—although it may be of an epidemic character—is more than we are at present prepared to assert.

Another great apparent difference between the diseases in the ox and horse is, that pleuro-pneumonia in cattle has hitherto proved an extremely fatal disease; a disease a great deal more fatal, generally speaking, than any influenza or epidemic of the kind

has, within our remembrance, proved in horses. This Mr. Dun ascribes to the "essential" difference between the two diseases, or between pneumonia, pleurisy or bronchitis, and pleuro-pneumonia in cattle, which he states to reside in "that typhoid or adynamic fever so pathognomonic of epizootic diseases." Whether this can be said to be arising from a difference in the nature of the disease itself, or to be one springing out of the generic nature of the animal, or out of the circumstances under which the animal is invaded by the disease, we have not time now to inquire. Let it suffice to remark, *en passant*, that, in the pulmonic form of influenza in horses, we all know that the tendency to debility and prostration is predominant, and that this sometimes leads on to low or adynamic fever—in some cases, indeed, to something resembling or approaching to typhoid fever; but, that such fever assumes the hopeless, *malignant*, "asphyxiated" form described by Mr. Dun, is not certainly among any of our *ordinary* observations.

With these few remarks we find we must, and we do so reluctantly, bring our review to a conclusion; which we shall do with giving at length Mr. Dun's *résumé*.

"The principal facts adduced in the foregoing pages may, by way of *résumé*, be briefly brought under review as follows. When any disease assumes an epidemic or epizootic form, the number of cases of other diseases very much decreases. There seems to be something in the animal constitution which favours its development, and all other diseases converge as it were, for the time, into the one absorbing focus.

"Pleuro-pneumonia seems to result from a modification of the same causes as induce other epidemic or epizootic diseases. Whatever the other exciting causes may be, contagion is certainly the principal one. Of the many other alleged causes, none possess all the essential characteristics of an exciting cause; some are not uniformly present, and do not constantly precede the disease, while the operation of others is inadequate to produce the effects imputed to them; and, therefore, although they may possess *some* of the properties which characterise exciting causes, they do not exhibit *all* the characteristics, and, consequently, are not entitled to be considered as the *efficient* exciting causes of any epidemic or epizootic disease.

"The remote or predisposing causes of pleuro-pneumonia are numerous, and include whatever reduces the vigour of the system, disturbs the operation of important functions, or infringes those

laws which Nature has laid down for the preservation of the health of her creatures. But although these predisposing causes are so various in their nature, and produce such serious results, they happily can, in the great majority of cases, be remedied or prevented by care and attention.

"We have shewn that most of the symptoms of pleuro-pneumonia are such as are exhibited in pneumonia, pleurisy, or bronchitis; modified, however, by the structure principally affected, or, in other words, by the local seat of the disease. The most remarkable peculiarity of pleuro-pneumonia, however, is the tendency of the inflammation to assume the sub-acute and chronic forms, and of the fever to lapse into the typhoid form; tendencies the effect of which renders the epizootic disease more fatal than ordinary pulmonary inflammation. In many cases the disease progresses for a considerable time before any symptoms become apparent. The consequent hold that it takes of the system before any remedial measures can be adopted, accounts, in a great measure, for the mortality attending it.

"The terminations and post-mortem appearances have been found to be exceedingly various, depending on the intensity, the duration, and the particular seat of the disease.

"We have indicated the means to be pursued in enabling the practitioner to discriminate between the same symptoms as exhibited in different diseases, and have shewn the importance of arriving at a just and true prognosis of the case to be treated.

"In the treatment of pleuro-pneumonia we have shewn the futility of depending on specifics; we have also shewn that the best and most scientific mode of treatment results from a deliberate consideration of the symptoms and the modifying influences amid which the animal may be placed. Observation and experience indicate the necessity of cautiously using depleting measures, and of supporting the strength and vigour of the constitution by the exhibition of tonics and stimulants. As much depends upon the care of those in charge of the animal being well directed, the practitioner's instructions should be given in plain and simple language, and accommodated to the capacity of those who have to follow them out.

"In using means to prevent the occurrence of the disease, we should endeavour to maintain in a sound and healthy tone the physical powers of the stock, and to avoid whatever tends to depress the vital force. Exposure to the influence of contagion must be guarded against, and, on the appearance of the disease, every precaution must be used to prevent the healthy having communication with the sick. By a steady pursuance, on the part of the stock-proprietor, of these precautionary measures, and by the ex-

ercise of care, prudence, and attention, the virulence of the disease will, we are sure, be much abated, and its progress checked. And although we can scarcely hope at once to banish it from the land, we may, at all events, greatly mitigate its ravages, and alleviate the sufferings of a class of animals whose existence and well-being are of so much national importance."

Home Extracts.

Carriages and Horses kept in Great Britain.

[From the Morning Chronicle, 10th October, 1850.]

According to the Government returns, the total number of carriages throughout Great Britain in 1848 was 149,000 and odd, which is in the proportion of 1 carriage to every 33 males of the entire population above twenty years of age. Of these carriages upwards of 97,000 were charged with duty, and yielded a revenue of more than £434,000, while 52,000 were exempt from taxation Those charged with duty consisted of 67,000 four-wheeled carriages (of which 26,000 were private conveyances and 41,000 let to hire); and 30,000 two-wheeled carriages, of which 24,500 were for private use, and 5,500 for the use of the public.

The 41,000 four-wheeled carriages, let to hire, were subdivided, in round numbers, as follows:—

Four-wheeled carriages let to hire without horses	500
Pony phætons, &c. drawn by a pair	2000
Broughams, flies, &c., drawn by one horse	30,000
Hearses	1700
Post-chaises.....	5550
Carriers' conveyances.....	1250
	41,000

Of the 52,000 carriages exempt from taxation there was the following distribution:—

Private pony phætons	7000
Ditto pony chaises	4500
Chaise carts.....	39,000
Conveyances for paupers and criminals	1500
	52,000

The owners of four-wheeled private carriages were, it appears from the same returns, 20,739; of whom

16,349	persons	kept 1	carriage	58	persons	kept 5	carriages
3685	„	2	„	19	„	6	„
495	„	3	„	6	„	7	„
116	„	4	„	11	„	8	and upwards

Now, the total number of persons returned as of independent means at the time of taking the last census was 500,000 and odd; of these, very nearly 490,000 were 20 years of age and upwards. Hence it would appear that only 1 person in every 23 of those who are independent keep their carriage.

Such are the statistics of the carriages, both public and private, of Great Britain. What proportion of the vehicles above enumerated belong to the metropolis I have no means of ascertaining with any accuracy.

The number of horses throughout the country is equally curious. In 1847 there were no less than 800,000 horses in Great Britain, which is in the proportion of five horses to each carriage, and of one horse to every six males of the entire population of 20 years of age and upwards. Of these 800,000 horses upwards of 320,000 were charged with duty, while nearly 500,000 were exempt from it. Among the 320,000 horses charged with duty were comprised—

Private riding and carriage horses	143,000
Draught horses used in trade	147,000
Ponies	22,000
Butchers' horses	4750
Job horses	17,500
Race horses	15,000
	349,250

The horses not charged with duty were, in round numbers, as under—

Horses used in husbandry	330,500
Horses belonging to small farmers	61,000
Horses belonging to poor clergymen	1250
Horses belonging to poor traders	10,500
Horses belonging to volunteers	13,000
Horses used in untaxed carriages	15,000
Horses used by waggoners for their own riding	2000
Horses used by bailiffs, shepherds, &c., ditto	1600
Horses used by masters ditto	3700
Horses used by market gardeners	2000
Horses used in conveying paupers and criminals	250
Horses kept for sale	7000
Horses kept for breeding	4500
Colts not used	16,000
Post horses	8500
Stage-coach horses	9600
London hackney-coach horses	3600
	490,000

The owners of the 140,000 private riding and carriage horses were 100,000 in number, and of these—

78,335	persons kept	1	107	persons kept.....	10 to 12
17,358	„	2	54	„	13 to 16
4080	„	3	6	„	17
1624	„	4	8	„	18
622	„	5	6	„	19
380	„	6	67	„	20
328	„ .....7 to	8			and upwards.
81	„	9			

From this it would appear that two persons in every seven of those who are of independent means keep a riding or carriage horse.

The increase and decrease in the number of carriages and horses within the last ten years is a remarkable sign of the times. Since 1840 the number of all kinds of horses throughout Great Britain has decreased 43,000. But while some have declined, others have increased in number. Of private riding and carriage horses (where one only is kept) there has been a decrease of 12,000, and of ponies 700. Stage-coach horses have declined 4000; post horses 2500; horses used in husbandry, 57,000; breeding mares, 1300; colts, 7000; and horses kept for sale, 500. The London hackney-coach horses, on the other hand, have increased in the same space of time no less than 2000, and so have the draught horses used in trade to the extent of 17,000; while those kept by small farmers are 13,000 more, and the race-horses 400 more than they were in 1840.

Experiments made on Sheep with the Insect, the Ichor, the Scurf and the Blood of Sheep affected with the Scab.

By Herhwig.

[Continued from page 589].

Experiments No. 1 *and* 2.

Inoculation by Means of the Insect.—(Performed on the sheep Nos. 1 and 2.)—1*st day.* On the 7th of October, at nine o'clock in the forenoon, I inoculated these two sheep in the following manner. A lock of wool was pulled off from the middle of the back, so that a naked spot, 4-10ths of an inch broad and 8-10ths of an inch long, was formed, and upon this spot another lock of wool taken from the neck of another very scabby sheep was laid,

which contained ten vigorous insects of both sexes. The surrounding wool was then pressed over the inoculated part, and the sheep were penned in a separate clean stall. On the 2d day, i. e., October the 8th, eight insects were seen which had crept amongst the surrounding old wool: two of them could not be found; each of them were living. The skin on the spot was redder and warmer than natural.—3d day (October the 9th). The insects have all disappeared; not one can be found upon the hide. The spot upon which the experiment has been performed is covered with a thin yellow scurf, which allows itself to be loosened with the point of a knife, and the skin underneath appears of a bluish red; the spot also appears a little swollen. This scurf seems not to have been the result of the infection, but the irritation produced upon the skin by pulling off the wool.—From the 4th to the 6th day, i. e., from the 10th to the 12th of October, the parts appeared to be in the same condition as above.—On the 7th day, October 13th, things were nearly the same, but the scurf had become browner and harder, and in the neighbourhood of the raised spot, which was still covered with wool, there were many little superficial hard rough spots, about 2-10ths of an inch in size, in which the colour had become bluish, and inflammation seemed to have commenced. —On the 8th and 9th day, i. e., October 14th and 15th, appearances were as on the preceding days.—On the 10th day, i. e., October the 16th, under the scurf several insects made their appearance; the hide was itself harder, and all around the spot there were small yellow brown scabs. In all these places the sheep seemed to itch by attempting to rub themselves, and when the part was scratched by the nail the animal shewed pleasure by the well-known motion of the lips.—From the 11th to the 15th day, i. e., from the 17th to the 21st of October, things remain exactly as last reported, excepting that the disease is greater in degree and has spread further.—16th, 17th, and 18th, from the 21st to the 24th October, much the same. The extent of the scab in the infected part is now about two square inches, and at every point covered over with scab, under which an abundance of insects are discovered.—From the 19th to the 21st day, i. e., from October 25th to the 27th, the same, excepting that the disease continues to spread. —21st to 32d, i. e., from October the 28th to November 7th, the same: the part now covered with scab is twice the extent of that first infected.—From the 33d to the 38th day, i. e., from the 7th to the 13th of November, the scab continued to extend more and more, so that on the 39th day (14th November) the scab had extended over the greatest part of the back. The scurf is in different parts of different thickness and colour, principally yellow-brown, about half-an-inch thick, firm, and, on account of its transparency,

a sort of shining surface; it was tolerably adherent to the hide, here and there cracked, and in the cracks were seen the insects in their nests. It is peculiar that we, after the 6th day, found fewer insects than before that time. To-day the sheep were washed with Walz's wash. — On the 47th, the 22d of November, the wash was repeated, and by that means the scab was completely cured in both sheep.

Experiment No. 3.

Inoculation with a single Insect.—(Sheep No. 3.) On the 7th of October, about noon, one of the insects was taken from a scabby sheep, which was known to be a female by its eight well-developed feet, and gave evidence of its being pregnant by its thick, almost round body: this was carefully placed upon the skin of the back of the sheep, which has been above marked No. 3. The little animal lay quiet for some time, so that we could not see when it bored into the skin. The wool was pressed together over the spot, and was marked strongly with ink, that it might more easily again be found.—2d day: The insect could not be found in the spot, nor was there any appearance of change in the hide there or around.—3d day: To-day there is neither insect to be found, nor any appearance of disease of the skin.—From the 4th to the 6th day, the same.—7th day: On this day, a little elevated spot, about the size of the head of a pin, appears at the spot, which is moderately hard, but without a change of colour, and not apparently hotter nor more irritable than the rest of the skin.—On the 8th and 9th days, the little elevation observed yesterday is covered in the middle by a very small yellow scurf, which is firmly fixed upon the skin. Around it the skin is somewhat redder, not inflamed, but harder than the rest of the skin.—10th and 11th days: The little scurf is gone, and in its place the skin is of a yellowish dirty colour, rough and moist.—On the 12th day, the same, but a new scurf is formed.—13th day: The scurf seen yesterday is larger and firmer than the former, and the skin around is harder, redder, and more inflamed than before. When slightly rubbed with the finger, the sheep was pleased, and, when it is more strongly rubbed, it wags its lips.—14th day: The same appearances were remarked as yesterday; the yellowish scurf had a darker appearance, almost brown, and at different joints appeared to be coming loose. When it was raised by a pair of pincers, five little insects made their appearance, which moved themselves in a lively way in the midst of the moisture which surrounded them, and then crept out in different directions: the large or old insect was not to be found.—15th day: A new and thicker scurf has

formed, which sticks fast upon the skin. The skin itself in the neighbourhood of the scurf is hard and of a yellowish-blue colour, and by rubbing seems very irritable. At different points eight little insects can be counted, which are seen only on the skin, and not amongst the wool.—16th to 18th days: The scurf both in extent and thickness increases, and has a dark yellow surface. The change in the skin observed yesterday spreads itself more and more; the insects increase in size, but their number lessens: the sheep seems to wish to rub the infected part with its lips.—From the 19th to the 31st day: The scurf spreads itself, as well as the change of skin, wider and wider, so that the disease is now five inches in circumference. The insects are very much increased, and now there can be no doubt of the real existence of the scab: on this account the experiment was put an end to. The sheep on the 14th and 23d of November was washed with Walz's wash, and the scab was perfectly cured.

Experiment No. 4.

Experiment with the Moist Discharge from under the Scab.—(Sheep No. 6.)—I endeavoured, on the 7th of October, to communicate the disease to the sheep marked No. 6, in the following manner:—I raised from one of the most diseased sheep a scab from the skin with great care, so as not to produce any bleeding. I then procured some of the matter which was underneath the scab by means of the end of a knife, and then rubbed it upon two spots on the back of the healthy sheep, at a distance from each other, and from which a small quantity of wool had been previously clean removed, but so carefully as not to injure the skin: the wool around was then pressed together over the spot, and the sheep was put back into his former stall, and kept perfectly separated from all others. 2d day, 8th of October: The skin appears in some degree red and warmer than natural; on the spots and towards the evening their surfaces were more moist than before.—3d day, 9th of October: About noon, the skin on the part appeared of a pearly colour, with soft, thin, and loose scabs, of a yellowish colour: there was not the least trace of insects to be seen, and the degree of the irritation not to be altered.—4th to the 10th day, from the 10th to the 16th of October: The condition of the spots continues the same, and the surrounding parts are perfectly sound.—11th day, 17th of October: The scurf is now somewhat harder, and more brown, and firmer fixed to the skin. When the spots are rubbed, the animal shews no pleasure. There is not the slightest trace of insects.—12th to 14th day, from 18th to 20th of

October: The condition of the animal is in no way changed.—15th day, 21st of October: As before; much of the scurf, however, on being carefully separated there was discovered no insects underneath: the skin under the scurf was moist, with some appearance of inflammation around. 16th to 17th day, 22d to 23d of October: The same.—18th day, October 24: Much the same. By the most careful inspection no insect could be found. The scurf now begins to loosen, and it has in no way increased in extent.—19th day, 25th of October: The same as yesterday.—20th day, October 26: The scurf comes off spontaneously, and the skin appears sound underneath.—21st day, October 27: New wool now begins to sprout up.—22d to 26th day, from October 28 to November 1: The wool is growing in a perfectly natural manner.

Experiment No. 5 (repetition of the former).

The former inoculation for twenty-six days after the former date having shewn no tendency to produce the scab, the experiment was on the 2d of November, at nine o'clock in the forenoon, repeated on the same sheep in the following manner:—About the middle of the left shoulder-blade, and in the neighbourhood of the left flank, the wool was clipped off from the skin as close as possible. The skin on the first spot was left whole, and was only moderately rubbed with the hand for a minute, for the purpose of causing the matter to be applied to remain in contact with it. The other spot, however, was punctured in three different places, and some friction applied. Then some matter, taken from under the scab of a sheep much affected, was by means of the blade of a knife applied to both spots, and gently rubbed upon them; then the wool surrounding the spots was brought together. Neither the naked eye nor the help of a microscope could discover a single insect among the matter.

The removal of the wool in the foregoing experiment produced considerable irritation, and caused a good deal of yellow scurf to be formed. To make sure that this was the cause of the above effects, to-day, at two spots on the right side of the belly and breast of the same sheep, some wool was pulled off without applying any of the matter.—2d day, Nov. 3d: at both spots on which the matter has been applied the skin is warmer and redder than the surrounding parts, but there is no knotty hardness to be felt. The skin is a little more moist around. Where the incisions were made there is a dark bloody scab. Both the naked spots on the right side of the body where the wool was simply removed was exactly in the same state as in those spots where the matter was

applied.—3d day, Nov. 4th: The inoculated spots are somewhat harder than the sound skin; they are also red, and on the surface there is a thin soft scurf of a yellowish colour. The punctures are still covered with the bloody scab, but are without any further change. The parts on the other side from which the wool was removed are red, warm, and somewhat tense, and in part covered with a yellowish scurf.—4th day, Nov. 5th: The colour of the skin on the flank where the matter was applied in the three punctures is changed in colour from red to yellow. The heat is scarcely above natural, and the irritation not at all increased: by rubbing the part there appears to be no effect produced upon the animal. The yellow scurf in most of the places and the bloody scab on the little wounds are the same as yesterday. The spots to which the matter was not applied have the same appearance as yesterday, except the scurf is somewhat thicker and firmer.—5th day, November 6th: In all the spots the appearances are the same as yesterday.—6th to 9th day, from 7th to 10th November: The same, excepting that on the spot of the shoulder-blade, where the matter had been applied, there is a little swelling of the size of a millet-seed, which is somewhat hard, of a yellowish-red colour, and very irritable: in the surrounding part the skin is somewhat harder, irritable, and of a bluish-gray colour. 10th day: The inoculated spot on the shoulder the same as yesterday. The punctures on the flank are healed and the scabs are fallen off. The knots and the change of colour in the skin are no more to be seen. The places from which the wool had been removed are covered with a thin yellow scurf, but shew no further change.—11th day, November 12th: Appearances the same as yesterday.—12th day: The knot in the shoulder-blade appears to-day with a little yellowish-brown scurf on the top, and there is more redness around it, and very irritable: the sheep rubs himself with his mouth and his foot in this spot, and when the man scratches it the animal wags his lip. In the other spot to which the matter has been applied there is no change, nor is there any change in the spot from which the wool was taken.—13th day: In the spot on the shoulder there are now to be seen surrounding the little knot several insects of different sizes, and lively. The skin itself is as yesterday. The spot on the hinder part is quite sound. The two places from which the wool was simply removed are still covered with scurf, but without irritation.—14th to 16th day, 15th to 17th November: The spot on the fore part shews more and more the symptoms of the scab, and the insects daily increase. The spot behind is now quite healthy; on the other two spots the wool is now growing afresh, by which the yellow scurf is loosened from the skin, which appears quite healthy underneath.—17th to 29th day: The scab

increases daily more and more on the shoulder, and is now (the 30th of November) the breadth of a man's hand. The hindermost spot which was inoculated, as well as the other two spots, are now covered with healthy wool. From the 1st of December the disease was treated with mercurial ointment, and on the 10th of January 1828 the cure was complete. On the 10th of February this same sheep was subjected to the experiment No. 14.

Lynn Advertiser.

[To be continued.]

Foreign Extracts.

Chemico-Physiological Considerations on the Action of Diuretics.

By M. Tabourin.

[Continued from page 351 of The Veterinarian for June*.]

Sedative Diuretics†.

The medicaments composing this important group of diuretics are thus named, because, independently of the abundant diuresis they determine, they produce a sort of depression, a debility of the vital energy of organs, and especially of the centre of circulation. To a certain degree they may be ranked among *acrid narcotics*, inasmuch as they irritate the surfaces with which they come in contact, while they depress the nervous energy. By the disciples of Rasire they are classed among the *counter-stimulants*.

The mechanism through which medicaments excite urinary secretion remains in much obscurity. Some authors regarding their local operation chiefly, give it out that diuretics act principally on the kidneys by irritation of the glandular substance of the organs, and that thus they occasion diuresis. This is an action which assuredly takes place whenever such remedies are long continued, since we find them to become expelled through the urinary passages the same as all unassimilated matters are, circu-

* The irregularity with which we are apt to receive the Foreign Journals must plead our apology for so long an interval between the publication of the sections of this paper.—Ed. Vet.

† In the tabular account of diuretics in the former part of this paper (at p. 345), turpentine is placed by mistake among the class now under notice, viz. *sedatives;* whereas it belongs to "Balsamic Diuretics."

lating with the blood; but this is neither a first nor an essential effect, nor yet one of great importance for the operation of the diuretic, unless perhaps it be in the case of so direct an irritant as cantharadine.

Indeed, experience has shewn that in most cases medicaments of this class determine diuresis before they have had time to sensibly irritate the organs secretive of urine. On the contrary, such diuretics, independently of their operation on the kidneys, invariably have a marked sedative effect on the centres of organic life; whence results the retardation of the circulation and respiration, the slowness and weakness of the pulsations of the heart and arteries, the diminution of the animal heat, the lowering of the temperature of the skin, and such parts of the body as are distant from the centre of circulation, general debility, &c. Now, these depressive, counter-stimulant properties appear all to exert greater power over their diuretic agency than can be produced by means of direct irritation upon the secretory and excretory passages of the urine. There remains but this question to solve--Whether is the primitive or the secondary effect produced by such medicines *diuresic* or *sedative?* The problem is not yet answered. Let us see what a highly competent individual, M. Trousseau, has to say on the subject.

"One very remarkable fact, to which sufficient attention has not been given, is, that all sedatives of the circulation are diuretics; and, reciprocally, all diuretics exert a sedative effect on the circulation, commencing with cold, and proceeding to nitrate of potass, digitalis, squill, asparagus, ether, &c. Whence comes this commonality of purpose, this intimate relationship between them in their action?—for it is more than mere coincidence. There is no shutting one's eyes to the connexion subsisting between more or less activity of the urinary secretion and the circulation of the blood. There is an evident physiological relation, of which the law has not been sought after.

"One fact strikes us at the outset, a fact opposed to precedent; and that is, that all causes that increase the circulation, the calorification, the vegetative functions and action of the skin, diminish the secretion of urine. Such is the effect of general idiopathic fever, sweating, heating, pyretogenetic medicines. On the other hand, we see that every thing which has a contrary effect, every thing which suppresses the vegetative functions, diminishes the organic heat and cutaneous functions, lowering the action of the heart, &c., produces copious diuresis.

"So that one may estimate the sedative and anti-vital power of any therapeutic agent by its diuretic power, and *vice versâ*. But is it the diuretic action which produces the sedative, or is the first

owing to the latter? We believe that digitalis becomes a diuretic in consequence of its being directly anti-vital and sedative, on the same ground that we believe a cool bath or the feeling of fear suddenly to augment the secretion and emission of urine from their having first occasioned an impressive sedative effect. It seems to us that at the time the vegetative and plastic functions grow slack, as under the circumstances mentioned, while the action of the skin is diminished, the blood not having in its perepheric circulation much energy, all its serosity unemployed in these functions makes its escape through the uropoietic emunctory; and what favours this notion is, that, in those diureses ascribable to the sur-sedation of the organism, the urinary discharges become limpid, attenuated, of little specific gravity, containing but little colouring matter—in a word, extremely limpid. It is also to be remarked, that all those physical and moral causes which restrain the manifestations of vital activity, and throw the economy into sedation, such as syncopy, fear, and certain articles of the materia medica, &c., considerably augment absorption; and as such absorption first operates on the least animalized fluids and those that are attenuated, such as the serosity, we likewise find, in this circumstance, a new condition of diuresis, and a mode of reasoning on the beneficial action of medicaments analogous to the operation of digitalis in the treatment of dropsies or serous effusions."

Prior to examining the opinions of M. Trousseau, it appears to us that it would be interesting to bring under view those of the espousers of the doctrine of Rasire, who has occupied much of his time in investigating the action of sedative medicines, by them designated *counter-stimulants*.

Dr. Giacomini distinguishes diuretics under the title of *cardiaco-vascular hyposthenisants*. According to him, they cause diuresis in the following manner:—The kidneys are organs eminently vascular, provided with very large arterial trunks. They are not true glands; they are the products of the interlacement of vessels with tubes analogous to filters. They separate the urine from the blood by an action altogether passive, by veritable *filtration*. This is demonstrated by the numerous variations constantly exhibited by the urine, whose nature ever changes with that of the matter introduced into the blood through the divers absorptions, a circumstance unobservable in any other secretion. So that the kidneys do nothing more than separate, purely and simply from the blood, such matters as are intended to be cast off, and they fulfil this office the better the slower the blood circulates. And, so, every thing that has a tendency to increase the circulation, as violent movements, heat of atmosphere, alcoholic drinks, inflammation of the kidneys, fever, &c. lessens the quantity of the matters

separated from the blood by the kidneys in any given time. On the contrary, every thing which retards the circulation, such as aqueous or acidulated drinks, repose, lowness of temperature, warm baths, refrigerants, &c., augment the urinary secretion.

According to this author, it is therefore erroneous to suppose that diuresis is ever the result of irritation of the kidneys; for, says he, "so long as the pulse continues frequent and strong, and the blood circulates forcibly through the kidneys, the quantity of urine is diminished; while, on the contrary, when the pulse is slow and weak, and the blood circulates through the kidneys slowly, the urine becomes abundant*."

So that the inference to be drawn from these citations is, that all sedative medicines determine diuresis, and that this is ever the result of the narcotic effect of the sedation produced primarily in the organism. Such is, in a degree, the positive or experimental side of the question: let us now attempt the explanation of the facts.

To the Rasiriens (disciples of Rasire) the question is simple enough. The kidneys are nothing more than filters, and therefore their operation becomes so much the more perfect in proportion as the blood conveying the materials of the urine circulates with slowness through them. Now let us see if this explanation be well founded, and especially if it be of a nature satisfactory to genuine physiologists.

M. Trousseau explains the development of diuresis under the influence of sedation, through whatever agent, by a kind of functional reciprocation (*solidarité*) subsisting between the skin and the kidneys. The skin becoming inactive, secreting or exhaling but very scantily, during the sedation of the central organism, the kidneys are of necessity urged to redoubled activity in order to supply, in their capacity as emunctories, the surface of the body, which no longer receives but an insufficiency of blood and nervous energy for the exercise of its regular functions. Such is M. Rousseau's physiological explanation, and feasible enough it appears. Let us see if any others can be found.

1st. The skin is charged with three orders of functions:—The first, altogether mechanical, is to serve as a protective covering to the body; the second comprises the different secretions and exhalations issuing from it; and the third, its special tactile sensibility, which constitutes it an organ of sense, a sort of dependent of the cerebro-spinal nervous system.

As an organ charged with depuratory secretion and exhalation, the skin is in a state of complete reciprocity (*solidarité*) with the

* Traité Philosophique et Experimental de Matière Médicale et de Therapeutique, par G. A. Giacomi, p. 111 et 116.

urinary apparatus; the deficiency of one is made up by the redundance of the other, and *vice versâ*. So that it is quite clear that the explanation of M. Trousseau, which is in part adopted by every physiologist, is well founded.

But, independently of this functional dependence between the skin and the kidneys, the organs are mutually connected by sympathies. So that the moment the skin, even but for a short time, feels cold, there arises in the kidneys a secretory sur-excitation as the consequence of the nervous refrigeration, which the skin transmits to all organs, driving the blood from the circumference to the centre. This particular action, sympathetic between the skin and the kidneys, and which has not been sufficiently considered, appears to us to have a large share in the diuretic operation of these medicines. And we would account for it after this manner:—

All narcotic and counter-stimulant medicines, among which we may rank sedative diuretics, first excite the nervous centres, like all foreign substances accidentally introduced into the blood; but soon they diminish its activity, its nervous influence, as well in the organs of animal life as in those of organic life; whence result at once a diminution in their proper sensibility and in their organic activity.

The skin, as the organ of the sense of touch, loses much of its sensibility and vital energy under the influence of such medicines, which shews it to be immediately dependent upon the nervous centres. Moreover, the central organs of organic life, the heart principally, having lost some of their functional activity, send no longer but a small quantity of blood to the surface of the body: likewise the skin, already weakened by deficient innervation, loses little by little its natural heat, and, under the direct influence of the air, becomes more and more *cold* and inactive.

So that diminution of the secretion and transpiratory exhalation of the skin, of its general and tactile sensibility, with palpable abatement of its temperature, are the physiological effects produced upon this membrane by all sedatives, and especially by those now engaging our attention. The two former effects, and especially the diminution of the secretory functions, having been sufficiently examined in their relations with the urinary secretion, there remains the third, the *refrigerant* effect, which, perhaps, we have not sufficiently noticed, from not having considered it apart from the two others.

Let coldness of the skin proceed from what cause it may, diuresis invariably follows, as may be observed during the use of cooling and acidulated drinks, in the action of cold, &c.: this fact is evident enough. But is this effect owing to the suppression or diminution of the secretions or exhalations of the skin, or to that

kind of nervous refrigeration of which we have been speaking? Yes or no? Yes! whenever the cooling of the skin is owing to any external cause, or to the use of drinks which counteract pulmonary combustion. No! whenever the diminution of the superficial heat of the body is owing to a narcotic action or to a sedation of the centres of organic life. In fact, do we not observe, as the result of all narcotic and other empoisonments, a profound sedation, a considerable lowering of the temperature of the skin, with abundance of cold perspiration, and, nevertheless, often with copious urinary emissions?

Thus, we admit that diminution of the temperature of the skin, diminution of its vitality, can, independently of the cessation of its secretory functions, produce a more or less copious diuresis, by a sort of nervous refrigeration or sympathetic action.

2dly. Chemists are able on this interesting question to furnish us with valuable information, inasmuch as they have discovered and demonstrated the activity of organic combustion or respiration to be in inverse ratio to that of the depurative secretion of urine. Through respiration are combusted and eliminated, under the form of carbonic acid and water, the carbon and hydrogen of the aliments; and through the kidneys, under the form of *urea*, uric acid, and hippuric acid, the azote of the alimentary matters. Now if, from any cause, respiratory activity diminishes, as under the influence of sedative and narcotic medicines, the carbon and hydrogen of the aliments are expelled by the kidneys in a more complex form, particularly in that of uric acid, uro-benzoic acid, more carbonized and hydrogenated than urea, from the oxygen of the inspired air not being sufficient to generate more simple compositions, such as carbonic acid and water.

In accordance with these principles, it may happen also, that, under the sedative influence of the diuretics now occupying us, the respiratory and cutaneous functions charged with the elimination of carbonic acid and water (the products of organic combustion), diminished in their activity, might have their place supplied in this depuratory function by the kidneys: whence arises acceleration of their secretory action and the consequent development of diuresis.

From the preceding considerations, taken collectively, it follows that sedative diuretics are medicines of great power;—that they are capable of deeply altering the economy, whether it be through the mutation of the matters of nutrition, or through the nervous activity which regulates the great organic functions; therefore it becomes our duty to use them with prudence, and never to lose sight of their depressive effect on the nervous system. The cases they are best suited for are the phlegmasiæ, in which predominate

nervous phenomena and anormal action of the heart, and copious serous dropsies, especially those dependent upon obstructed circulation, alterations of the heart, &c. In the last cases especially it is of importance to keep a narrow watch upon the general action of these medicines, because often at the time the blood and the central organ of the circulation are in conditions little favourable to vitality; and should we add to these existing causes of debility a diminution in the nervous influx, life might rapidly ebb away. This is what we occasionally remark when we use, in the smaller animals, squill, colchicum, and even digitalis, principally against ascites. The local condition of the disease amends rapidly at first, the belly diminishes in volume, the patients seem to be out of all danger, and, notwithstanding, death happens in some cases on a sudden and without discoverable cause. It is extremely probable that the cause is to be found in the depressive action of these medicines on a nervous system already in a state of debility from possessing a blood too serous and a circulation too feeble.

Balsamic Diuretics.

Diuretic medicines of this class comprise the resins, the gum-resins, benzoic or cinnamic acid, and the essential oils. Their effects differ greatly according to the doses in which they are administered. Locally, they act as irritants: they also excite intense gastro-intestinal irritation if given uncombined and in strong doses. Moreover, the portion absorbed exerts its influence upon the organic centres, obstructs pulmonary combustion, excites lively contractions of the heart, renders the pulse hard and frequent, sends the blood to the skin, through which it in part makes its escape, as well as through the bronchi, and at length gains an outlet through the urinary passages, the secretory organs of which it irritates, and so momentarily diminishes their action.

If such medicines are administered in small doses, they become absorbed without creating any local irritation or well-marked general excitation. Having reached the blood, they make little effort to leave the circulatory current by the skin or the bronchi, being eliminated readily with the urinary discharges, which they render clear, soft to the feel, frothy, and to which they almost always communicate an agreeable violet odour. Lastly, these medicines stimulate the kidneys—in the long run, even irritate them—as well as the linings of the urinary passages, especially if these last are already inflamed, and the use of the medicine be long continued or given in large doses. But, in the contrary case, it is observed that such medicines render the urine more fluid and softer, insomuch that it becomes a veritable topic to the passages over which

it passes; able to calm too high irritation and diminish or even completely arrest the nervous super-secretion of which they might be the seat, &c.

The diminution of the natural acridity of the urinary discharges, and their violet odour, under the influence of balsamic diuretics, are two important facts in the history of these medicines which it becomes of importance for us to examine.

Such medicines being by nature acrid, it is curious enough that they should possess the property of diminishing acridity in the urine. This cannot be explained entirely by the state of extreme division in which they may be when they reach the kidneys; for this is a state which produces simple attenuation of property and not the radical change that is observed. So that it follows, that their components must have undergone some change in their nature in the blood, whether it be the consequence of respiration, or, which to us is more probable, through the action of the alkaline ingredients of this fluid, which would tend to form soapy compounds with the resins, the gum-resins, and the essences. Indeed, this seems to be indicated at the time by the nature of the urine and the development of the violet odour, as we have already pointed out.

Concentrated essences always have a less fragrant odour than such as are in a state of extreme division, as they exist by nature in parts of such vegetables as produce them, and often, indeed, the odour is altogether of another kind. According to this, we may attribute the change of odour experienced, in the animal economy, by the essential oil of turpentine, for example, to its state of attenuation in the organic cullenders. This, however, goes for nothing, since it is ejected through the skin and bronchial tubes without any change of odour, while that excreted through the urinary passages always possesses a strong violet odour.

To what, then, are we to attribute this change of odour? Evidently to a chemical modification of the essence, since our chemist (M. Deville) has recently succeeded in transforming it into essence of lemon. But whence comes such a change? It is not in the digestive canal, since the oil of turpentine, reduced to vapour and inhaled, rapidly communicates a violet odour to the urine. Is it in the blood? Nothing goes to prove this, because the expired air and the perspiration never have any other odour but that of the spirits of turpentine. It is, consequently, to all appearance, in the urinary passages even that this transformation takes place. How is it accomplished? It would be difficult to say before experimental inquiry has taught it us. Nevertheless, we believe it is the azotic principles, and especially the saline ingredients, of the urine which work this modification. Without, however, any de-

sire to affirm this as the true cause of the phenomena, one fact appears certain, which is, that in the fabrication of resinous soaps is noticed an elimination of violet odour, whenever, in the saponification of resins, there remains behind some of the essential ingredients.

We have no desire to dwell longer on this subject, no more than we have on the history of diuretics. Our aim was not to frame a complete table of this important branch of medication; we have merely felt desirous of bringing together, without attaching more weight to them than they are deserving of, the chemical and physiological discoveries of late years, which to us have appeared of a nature to cast light upon the action of diuretic medicine. The *resumé* of the principal indications of these medicines will terminate the task we have set ourselves.

Diuretics, considered generally, are indicated in the following diseases:—1st. In fevers, and in most internal phlegmasiæ under the name of revulsives, diluters, and antiphlogistics. 2dly. In dropsies of the large serous cavities and effusions into the cellular tissue, as evacuants, and as modificators of nutrition and absorption. 3dly. In virulent, putrid and miasmatic diseases, and in poisonings, in order to excite the elimination by the kidneys of the morbific and toxical matters. 4thly. In cutaneous affections, with the double intention of producing a convulsive effect and a derivative action of the kidneys, in attracting to them an afflux of blood, and creating inordinate secretion, which might balance the secretions of the skin. 5thly. In the case of mucous flux, or even of issues, which we are desirous of diminishing or suppressing, in determining in the uropoietic passages a highly active secretion which might serve as compensatory flux, &c.

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On the Sense of Touch in the Horse's Foot.

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[Extracts from a Lecture delivered before the National Academy of Medicine on the occasion of its meeting, 14th May, 1850.]

Beneath the horny covering of the foot is a vascular and nervous membrane, a continuation of the true skin of the body, which is endowed with an exquisite tactile sensibility which it owes to the presence of countless processes issuing like the nap of

velvet out of its surface, denominated its *papillæ* or *villo-papillæ*. These villous papillæ are received into horny sheaths, which conduct them through the substance of the hoof, as it were, for the purpose of meeting sensations, and in such manner, by their number, their bulk, their protraction, their volume, and, above all, by their exquisite sensibility, compensating for their unfavourable situation beneath the horny breast-plate covering them, which would necessarily have rendered their sensorial faculty obtuse had it not been for these circumstances.

The faculty of touch is not that assigned by authors in general to the foot of the horse. They consider the papillæ as the essential organs of secretion; whereas we, having analogy to support us, endow them with the power of feeling.

Are not the papillæ of the horse's foot similar to the papillæ at the extremities of the fingers of man, whose functions as organs of touch are indisputable? And again, are the horse's feet not analogous in their papillary developments to the paws of the cat, the claws of birds, and in particular to such as, like the parrot and birds of prey, make use of their claws as instruments of prehension and touch.

Why should the papillary structure exist in the horse's foot? Is it of a different use there from what the same structure serves in other animals? And were not such analogical inferences fairly deducible, we might argue from the very situation of the papillary prolongations of the foot what their use was. Whereabouts do we find them?

First of all, upon the frog, at the summit of its parietal fibres, opposite to the extremities of those (sensitive) fibres which are directed towards the ground, thereby coming immediately under the influence of sensations transmitted from the ground through continuity of the parietal fibre. Should the thickness of horn and the distance this places the papillæ at from the objects by which they become impressed be raised as objections to such functions, it may be answered, that such a disposition of parts is common to animal organization, and that natural history furnishes many examples shewing that the nervous pulp preserves an exquisite sensibility in spite of any external covering it may have. The teeth are sensible to a very light touch notwithstanding the thick layer of ivory separating the interior pulp from the body impressing them. Again, in many animals, the most delicate instruments of touch are the long hairs issuing from their lips, though they are nothing more than inert flexible shafts interposed between external bodies and the sensitive pulps into which they are implanted. And, to take an example bearing some analogy to the subject in question, the beak of the duck possesses extremely minute tactile cognizance,

owing to a considerable bundle of the fifth pair of nerves, which, according to Dugès, expend themselves in the superior jaw, at the origin of the beak, between the bone and the horn.

So that it is not drawing too largely on *vraisemblance* to assert that, notwithstanding their removed situation from the ground, the papillæ of the frog are its organs of touch.

The use, therefore, we assign to the papillary processes of the foot seems demonstrated. But, is the tactile property exclusively confined to these parts? No! The plantar papillæ are no more, so to speak, than appendices to the nervous textures of the tegumentary membranes, sorts of processes designed to penetrate the hoof and endow it with participation in their own sensorial property, and we may add, in no slight degree. But are the membranes from which the papillæ proceed very sensible, and does the podophyllous or laminated tissue, which only takes on the papillary form at the extremities of the laminæ, enjoy any very marked sensibility throughout its extent? Its lamellated processes may be considered as issuing out of the general sensitive covering of the foot, and as designed, in the same manner as the papillæ themselves, to penetrate the hoof, with the intention of diminishing, in effect, its thickness without detracting from its solidity, by placing the nervous tissue more directly under the contact of the body intended to make impression upon it.

The exquisite sensibility of the papillæ, as well as of the processes issuing out of the laminæ is, moreover, rendered evident in a variety of ways telling in favour of our views. Does not the animal manifest sharp pain whenever the frog is cut away down to the substance of the horn which is traversed by the papillary prolongations? Or is any thing more painful to him than the squeezing of the lamellated substance between the lips of a fissure in the crust? And, lastly, cauterization by the red hot iron, through the thickness of the hoof, of the extremities of the papillary processes perforating it, as happens on occasions in shoeing, is always extremely painful, and sometimes proves the cause of fearful inflammatory accidents.

The sensitive faculty is not confined to the membranous envelopes of the foot; every component part of it is, in a measure, possessed of sensibility. It is in the papillary tissue, however, that resides in a particular manner the sense of touch.

A sense of this kind specially developed at the extreme ends of the limbs of the horse, taking cognizance of objects through the thickness of the hoof, became necessary to enable the animal to regulate, in the different paces, the percussion of the foot against the ground; to estimate the momentary position of the solar surface of the foot; and to dispose the axes of its bony columns

of support in the most favourable manner for deadening the shock.

In fact, it is owing to this plantar sensibility that the animal is made conscious of the properties of the ground upon which he treads, through which he is enabled to preserve his equilibrium in the various paces, let what will be the nature of the surface. Directed by instinct in the regulation of the attitude which the limb should take to sustain the machine through its different movements, thanks to the sense of touch in the foot, it becomes forewarned in what position it should meet the ground to insure the greatest firmness of *appui*.

Owing to this sensibility of his feet it is, whatever may be the pace at which the animal is going, though it be racing even, that the horse preserves so steady an equilibrium in his instability.

Is it likely, for example, that but for this sensitive faculty of his hoofed feet, the horse would possess that sure-footedness upon the mountain-side and border of the abyss, without the risk of danger to himself or to his rider?

Does any body suppose that the English hunter engaged in the fox-chace could maintain his impetuous course over all sorts of obstacles with the same safety as he does were it not for the provision at the extremities of his limbs of apparatus for touch which made him conscious of the ground he was treading upon and going over?

Does not the blind horse lift up his fore legs high every step he takes in order that he may sound the ground upon which he is treading, the same as a blind man feels it with his stick; and does not this shew the use of the feeling faculty in the foot?

Buffon, in his elegant language, has represented the dog as *seeing by his nose*, to such an extent does the sense of smell serve him in following the track of the animal he is pursuing. We might borrow the expression of the great naturalist, and say that *blind horses see by their feet:* of so great use is the faculty of taction in their feet to them in insuring the safety of their steps.

And if we required any experimental proof of the necessity there was for the horn-covered feet of the horse to be endowed with palpable sensibility, we should find it in the consequences of neurotomy.

What happens as the consequence of neurotomy? Why, the animal having lost all sensitive power in his feet, is at a loss how to graduate the force of the percussion of his steps to the resistance the ground from its nature offers to them; on the one hand, because he cannot form an exact notion of the distance his foot is raised off the ground upon which he is about to replace it; on the other, because he is no longer warned by the sensation created by

the intensity of the percussion. So that the foot, at the extremity of the column of bones, is rendered a sort of block or inert body, without any dependence on the sensitive system, which the animal projects and strikes against any obstacle that happens to stand up from the ground, without forseeing what may happen from it; without, indeed, feeling what the obstruction is; and, such under certain conditions, may be the consequences of these unreckoned upon and miscalculated percussions of the foot against the ground, that it is by no means uncommon to see, as the effect of hurried and protracted journeys, neurotomized horses cast their hoofs, which have become detached through softening and gangrene of the living parts underneath.

Another consequence of the operation of neurotomy is the incertitude occasioned to the equilibrium of the machine, especially in rapid movements.

From the foregoing rapid sketch, it appears to us that the sensibility wherewith the digital extremities of the horse are endowed in so eminent a degree, constitutes the fundamental condition of his firmness of attitude and safety of movement, which remains so secure, notwithstanding the instability of his equilibrium. The pathologist will also know well what value to set upon it in his treatment of the important diseases to which the interior of the foot is so obnoxious*.

Recueil de Méd. Vét., June, 1850.

* On the same subject Mr. Percivall has written to the following effect:—"There can be no doubt but what the horse *feels* the ground upon which he is treading, and that he regulates his action in consonance with such feeling, so as to render his step the least jarring and fatiguing to himself, and therefore the easiest and pleasantest to his rider. The tread of the hoof creates a certain impression—depending on the nature of the ground trodden upon, and the force and manner with which the tread is made—on the nerves (of sensation) of the foot; which nerves being associated above the knee, in their course to the sensorium, with motor nervous fibres, the motions excited by the latter will necessarily be more or less influenced, through the will, by the impressions they receive from the former. Such impressions being, in the neurotomized subject, so far as regards the feeling of the foot, altogether wanting, a bold fearless projection of the limb in action will be the consequence, followed by a putting down of the hoof flat upon the ground as though it were a block, creating a sensation alike unpleasant both to horse and rider. These combined alterations in action and mode of setting down the feet it is which give rise to the peculiarity in the gait of the neurotomized horse—consisting in lack of elasticity and consequent jarring movement—by which he is ever, when *both* fore feet have been operated on, distinguished by a rider experienced in such matters from other horses, as well as characterised in action and gait from what he formerly was himself."—*On Lameness in the Horse, pp.* 190 *and* 191.

VETERINARY JURISPRUDENCE.

Court of Queen's Bench.

Accident to Horses on a Railway.

Austin and Another v. *the Manchester, Sheffield, and Lincolnshire Railway Company.*

In the Court of Queen's Bench, the above case was recently tried. It was an action brought by Messrs. Austin and Davis, horse-dealers, residing in London, to recover £75 for injury done to certain horses. It appeared, by the case for the plaintiffs, that in February of last year the plaintiffs bought twenty-one horses at Beverley Fair, which having been taken to the station of the company at New Holland, it was arranged that they should be conveyed thence to London, and the fare £22..10s., was paid. The son of Austin and a servant were left to accompany the horses to town. They were placed in three trucks, covered with tarpaulin. The train had not proceeded far, when the plaintiffs' servant perceived that a wheel of one of the trucks smoked, and when they reached the station at Spalding, he pointed it out to the guard; but was told "to mind his own business," and the train went on. At the next stoppage he again pointed out the state of the wheel, and as no attention was paid to him he was about to grease it himself, but was prevented by the train going off, and he was obliged to get into the carriage. A little past Peterborough a concussion was felt, the axle-tree of the truck broke, the wheel which had been burning came off, and the trucks were thrown off the line. One of the horses, a blood mare, had her back broken, and it was necessary to kill her, and others were much injured. The train did not stop a moment, but went on, and the servant would have been left behind if he had not been dragged into a carriage through the window, but the horses were left there until a special train was sent back to fetch them from March, the next station. Evidence of these facts was given, and veterinary surgeons were called to prove the damage.

Sir Frederick Thesiger, for the defence, urged that the company which was sued, although legally liable, was not strictly and morally so, for their line extended only to Great Grimsby; from thence the line was the East Lincolnshire, which went on to Peterborough, and from thence to London it was the Eastern Counties. It was usual in the conveyance of horses to place them in horse-boxes, which was the only prudent and safe mode

of transit; but, in this instance, the plaintiffs desired to have their horses conveyed in open trucks, such as are used to convey cattle, the expense being about one-half less. The station master at New Holland refused to place the horses in trucks unless the plaintiffs signed a special agreement, by which they took the risk on themselves. This agreement was on a printed form, part of which was cut from a book and given to the parties, and the counterfoil left with the company. The terms of this agreement were as follow:—"This ticket is issued subject to the owners undertaking to bear all risk of injury by conveyance and other contingencies, and the owner is required to see the efficiency of the carriage before he allows his horses or live stock to be placed therein. The charge being for the use of the railway carriage and locomotive power only, the company will not be responsible for any alleged defect in the carriages or trucks, unless complaint is made at the time of booking, or before the same leave the station, nor for any damages, however caused, to horses, cattle, or live stock of any description, travelling on their railway or in their vehicles." The following declaration was also to be signed by the owner: "I have examined the carriages, and am satisfied as to their sufficiency and safety." This agreement, of course, bound persons signing it; and in this instance it was signed by Davis for Austin, who could not write. Horses were generally sent by the goods' train; but here, at the plaintiff's request, they were sent by the passengers' train. There was no negligence on the part of the company; for, on the showing of the plaintiff's own witnesses, the carriages had been examined, greased, and watered at several stations before the accident. Evidence was called to support this case; and, in cross-examination, it was elicted that the agreement and declaration above-mentioned were signed by every one who had cattle or live stock transmitted by this railway; and also that the plaintiff, Davis, was made to sign the declaration the night before the carriages were even selected.

Mr. Justice Erle left the following questions to the jury:—Whether the axletree was radically bad. Whether the defendants were guilty of negligence in having an insufficient axletree, the defect of which was not apparent. Whether the accident was occasioned by the wheel being set on fire, and, if so, whether it was the duty of the defendants to have stopped the train.

The Jury returned a verdict as to the first for the defendants, and upon all the others for the plaintiffs.—Damages £70.

PROCEEDINGS OF THE COUNCIL OF THE ROYAL COLLEGE OF VETERINARY SURGEONS.

Sitting of October 2, 1850.

Present,—Messrs. BRABY, CHERRY, A. CHERRY, ERNES, FIELD, HENDERSON, SPOONER (Prof.), WILKINSON, and the SECRETARY.

Mr. A. CHERRY, Vice-President, in the Chair.

THE minutes of the previous meeting were read and confirmed.

Mr. Field, in tendering his resignation as Treasurer, laid the accounts before the meeting.

A brief discussion took place as to the acceptance of the resignation of the Treasurer, who was highly complimented on the efficiency of his services.

Mr. Field was asked by several members, if he would be willing to retain the office if its duties were modified; but he could not be prevailed on to withdraw his resignation.

On the motion of *Mr. Ernes*, seconded by *Mr. Wilkinson*, Mr. Field's resignation was then accepted.

The Secretary next read the Treasurer's account, which shewed a balance of £218..6*s*..8*d*. in favour of the College, after the payment of all its liabilities.

Mr. Field suggested that the accounts should be at once audited.

Messrs. Braby and Ernes were therefore appointed to audit the accounts, and the business of the meeting was suspended for a short time. It was found, however, that there were not sufficient *data* at hand for that purpose, and it was consequently resolved that the auditors' report should be received at a special meeting, to be held on Friday the 11th instant.

A discussion on the By-laws followed.

Mr. Ernes suggested several verbal and other alterations in the by-laws. Referring to the diploma, he proposed that the names of the Examiners should not be affixed thereto. He objected to so many names being appended to that document. The diploma, he thought, should only be signed by the President and the Professors, on the faith of a certificate given by the Examiners.

Mr. Braby saw no reason for the insertion of the names of the Professors any more than those of the Examiners.

Mr. Ernes next moved that the diploma be only signed by the President and two members of the Council.

Mr. Braby seconded the motion.

The Chairman urged that the names of the Examiners and the Professors should be inserted, being of value to the pupil.

Mr. Henderson moved that all the signatures at present proposed to be attached to the diploma should be retained.

The Secretary seconded the amendment.

The amendment was then put, when there was found to be an equal number of votes for and against it: upon which the Chairman gave his casting vote in its favour, and it was accordingly carried.

Some further alterations in the by-laws were then suggested by the *Secretary*. It was proposed by him, and seconded by *Mr. Ernes*, that the following form for the diploma be adopted:—

"Know all men, by these presents, That the Board of Examiners appointed under the Royal Charter of Incorporation, having examined Mr. —— , and having found him fully qualified to practise the art and science of veterinary surgery and medicine, he is hereby declared a member of the Royal College of Veterinary Surgeons. By order of the Council."

Carried.

On the motion of the *Secretary*, seconded by *Mr. Wilkinson*, it was agreed that the Registrar should, in his list of members, insert such honorary distinctions as were "specifically communicated to him."

On the motion of *Mr. Ernes*, seconded by *Mr. Henderson*, the proposed by-laws were then ordered to be suspended.

Mr. Wilkinson moved, that it be a standing order of Council that no diploma be signed by the President until it was filled up with the name of the successful candidate. He considered that the present system of signing the diplomas was very objectionable, as many irregularities might occur in consequence thereof.

The motion being seconded by *Mr. Braby*, was put and carried.

A letter was read from Mr. King, apologizing for his absence on the present and other occasions; and expressing his desire to resign his office as a member of Council, trusting that another more able to fulfil the duties devolving on him would be elected.

Mr. Wilkinson proposed that Mr. King should be written to, requesting that he would reconsider his decision, and withdraw his resignation.

Mr. Braby seconded the motion, which passed unanimously.

Professor Simonds, Mr. Ernes, and the Secretary, were named as the committee of supervision.

The proceedings then terminated.

At a Special Meeting of the Council of the Royal College of Veterinary Surgeons, held on Wednesday, October 11, 1850,

Present,—Messrs. BRABY, A. CHERRY, ERNES, HENDERSON, SIMONDS (Prof.), J. TURNER, WILKINSON, WITHERS, and the Secretary,

Mr. ERNES, Vice-President, in the Chair,

The minutes of the previous meeting were read and confirmed.

Mr. Braby (one of the auditors appointed at the last meeting) reported that he and his colleague had examined the late Treasurer's balance-sheet, which shewed a total amount of £553..18*s*..1*d*. received, and an expenditure of £77..4*s*..10*d*., leaving a balance of £476..13*s*..3*d*. He stated that the balance in the bankers' hands was, however, £20 more than the College was entitled to, owing to Mr. Field's clerk having inadvertently paid that sum into the College funds, instead of placing it to his (Mr. Field's) private account.

It was then agreed, on the motion of *Mr. A. Cherry*, seconded by *Mr. Braby*, that the above-named sum should be repaid, so that the bankers' book and the balance of accounts might agree.

Mr. Braby stated, that the liabilities of the College amounted to £258..17*s*., leaving a balance in its favour of £218..6*s*..3*d*., after these payments had been made.

The Secretary stated, that the probable expenditure for the rest of the year would be within £20; so that the Treasurer at its termination would have a clear balance in hand of £200. Nothing, he thought, could be more satisfactory. He moved "That the accounts as audited be passed."

Mr. A. Cherry seconded the motion, which was unanimously agreed to.

Mr. A. Cherry then proposed Mr. Henderson (than whom, he said, no one could be more fitted for the office) as Treasurer, in the room of Mr. Field.

Mr. J. Turner seconded the motion.

Mr. Braby suggested, that in future the Secretary, and not the Treasurer, should keep all the College accounts, so that the former might be, as it were, a check upon the latter; and proposed an addition to the by-laws relating to the duties of these two officers, which was ordered to be suspended.

Mr. Henderson expressed his willingness to accept the office to which he had been nominated. At the same time he observed, that it was not a pleasant thing (at least it had not been so lately) to hold office in the Council. Those who had hitherto done so had

frequently been subjected to unpleasant and often undeserved aspersions. He trusted, however, this would not be the case in future; and was sure that all the officers of the Council had very efficiently and honourably performed the several duties that devolved upon them.

Mr. Henderson was then unanimously elected to the vacant office.

The Secretary said that he lost no time (now that the election had taken place) in rising to propose a vote of thanks to the late Treasurer, Mr. Field. No one had had such opportunities as himself of witnessing the urbanity, the liberality, and the strict attention to business, which that gentleman had always shewn in the performance of the duties of his office. He had never known him hesitate to take any amount of trouble to benefit the College where its interests were concerned. In every respect, indeed, he had acted in such a manner as to command the most cordial thanks of the Council.

Mr. J. Turner, in seconding the proposal, said he wished to express the strong conviction he felt respecting the deep obligation the Council and the corporate body were under to Mr. Field for devoting his valuable time, and more especially at that particular period when the interests of the chartered body required the aid of such assistance.

The motion passed unanimously.

Cheques were then drawn and signed for the payment of the liabilities of the College.

On the motion of *Mr. Simonds*, seconded by *Mr. A. Cherry*, it was resolved "That the sum of £20 be placed to the credit of the Secretary, to meet current expenses on the petty cash account."

The Secretary read a letter from Mr. F. King, consenting to withdraw his resignation, as the Council desired it.

In answer to a question from *Mr. Wilkinson*,

The Secretary stated, that no steps had as yet been taken towards the re-organization of the Edinburgh Board of Examiners. A brief conversation took place on this subject; after which the Committee of Supervision of the last meeting was re-appointed, and the proceedings terminated.

THE VETERINARIAN, NOVEMBER 1, 1850.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

Mr. COOPER—but a young member of our profession, though, as a practitioner of veterinary medicine and surgery, old in experience, gathered in a wide and fertile field of practice which he has long enjoyed, and still continues to enjoy the range of—has introduced to our notice a new operation, to which he shall take the liberty of giving the name of *Ligotomy*. Mr. Cooper, some time since, had occasion to perform the operation of tenotomy on a draught mare, who had, in consequence of a sprain she had received just below the knee, an enlargement in that part; whereof the effect eventually proved to be, owing to neglect of the case and continuance of the mare, in spite of her ailment, at work, a crooked leg, which, at length, rendered her incapable of further labour. Mr. Cooper operated on her *above* the place of insertion into the flexor perforans tendon of the metacarpal ligament; but, when he had divided the flexor tendons, he found the limb as rigid and resisting as before: this led him to examine the parts, when he discovered the metacarpal ligament to be "considerably thickened." He determined to divide that also; the consequence of which turned out to be, that "the limb directly came into its proper position without any force at all being applied."

The above comprises the substance of an article from Mr. Cooper contained in our Number for June last. We this month have the pleasure of making public another communication from that gentleman on the same subject, wherein he reminds us of a specimen of disease in the metacarpal ligament he was some short time ago so kind as to send for our inspection, which certainly did afford "most indisputable evidence of thickening, enlargement, and adhesion of the said ligament, proving to have been the cause of the contracted sinews:" the tendons themselves being free from disease, and drawn up or "contracted" solely through the shortened and adherent condition of the metacarpal ligament.

The fact of the occasional seat of the disease in question being

the *ligament* in place of the tendon, and of the remedy, whenever that is the case, being division of the ligament instead of the tendon, will, in the language used by Mr. Cooper in his article for this month, "ere long be adopted by the profession." The circumstance of section of the ligament involving opening of a bursal sac certainly has the appearance of carrying danger with it. In *practice*, however, Mr. Cooper has found this not to be the case; and one fact, we all know, is worth a thousand theories. No surgeon would, if he could anywise avoid it, think of cutting into a bursal cavity; but when so desperate a case presents itself as a contracted limb, which is, through such contraction, rendered useless to the animal, he feels himself, *and is*, perfectly warranted in liberating the contracted sinews even at the expense of the bursa; and most certainly has a still stronger guarantee for thus acting, when he finds the parts diseased so situated that he must inevitably cut through them, were he to resolve to steer his knife clear of the synovial cavity. And the results of Mr. Cooper's operations fully bear out these views.

MISCELLANEA.

Properties of the Water obtained from Wenham Lake and Norwegian Ice.

In confirmation of the observations of Mr. Faraday on the purity of water obtained from Wenham Lake and Norwegian Ice, a specimen was lately submitted to examination, with the following results:—The water was colourless, tasteless, and vapid; it was free from acid and alkaline reaction; was not affected or rendered turbid by nitrate of baryta, oxalate of ammonia, nitrate of silver, ammonia with phosphate of ammonia, or lime water. It gave only a slight opacity after some minutes with acetate of lead, but this was no greater than the effect produced by the same re-agent on distilled water.

Tried with the soap test, it marked 0° of hardness; and, when a sheet of polished lead was plunged into it, a white deposit of hydrated oxide and carbonate of lead was formed in an hour. These facts shew that the water derived from pure ice is absolutely pure, and may be used in remote places as a substitute for distilled water when this cannot be readily procured. This suggestion may

be of use to those who have hitherto found a difficulty in procuring an abundant supply of distilled water for the purposes of chemical research.

Pharmaceutical Journal for August 1850.

Mitcham; its Physic Gardeners and Medicinal Plants.

More than 2000 years ago the physicians of Greece were supplied with herbs, of which their materia medica chiefly consisted, by a class of persons called ῥιζοτόμοι (*rhizotomi* or *root-cutters*), who occupied themselves with the collection and sale of roots and herbs. They are mentioned by Theophrastus in connexion with the Φαρμακοπῶλαι (*pharmacopolæ* or *pharmacopolists*). Most of them were illiterate and superstitious, and ascribed magical virtues to the roots and herbs which they collected.

Among the Romans these cullers of simples were termed *herbarii* (*herbarists*), and, if we are to believe Pliny, they were a sad set of knaves.

At the present day, and in our own country, the ῥιζοτόμοι of the Greeks and the *herbarii* of the Romans are represented by a class of persons called *simplers*, who go about the country collecting those medicinal herbs which grow wild, and the demand for which is insufficient to induce the dealers to cultivate them. The plants thus collected are sold chiefly to the *herbalists*, by whom the profession and public are supplied.

But those medicinal plants for which there is a sufficient demand, and which can be grown in this country, are cultivated in *physic gardens* or *physic grounds*, by persons called *physic gardeners* or *herb growers*.

Although the cultivation of medicinal plants is carried on in various parts of England, yet more land is employed in this way in Surrey than in any other county; and by far the greatest part of our physic grounds lie in the parish of Mitcham and its neighbourhood, about nine miles from London. The soil of this place is a rich black mould.

The cultivation of physical plants at Mitcham commenced about a century ago. Lysons, who wrote in 1796, says that forty years before his time there were only a few acres employed in the cultivation of medicinal herbs in this parish; whereas, at the time he wrote, about 250 acres (of which 100 acres were devoted to the cultivation of peppermint) were occupied by physic gardeners.

At the present time more than 800 acres are devoted to the cultivation of medicinal herbs, at Mitcham, Merton, and Carshalton.

About 1768 or 1769, Mr. Potter began the cultivation of physic plants at Mitcham. He was succeeded by his relative, Mr. James

Moore, who furnished Mr. Malcolm with the information contained in his work relating to the medicinal plants cultivated at Mitcham.

The following are the names of the principal growers at the present time, with the number of acres of land each person has under cultivation, and the number of stills in use :—

Growers' Names.	No. of Acres.	No. of Stills.	
Mr. Moore...	350	5	
" Arthur...	300	3	
" Martin...	40	3	(not much used.)
" Newman...	40	1	
" Sprules...	50	2	
" Weston...	40	0	
	820	14	

Several other growers cultivate a few acres of land.

A considerable number of medicinal plants are cultivated at Mitcham. Among the most important of these may be mentioned *aconite, chamomiles, belladonna, elaterium, liquorice, henbane, lavender, spearmint, peppermint, roses, poppies, savine, violets, angelica, stinking orache, caraway, foxglove, lovage, elecampane, marshmallow,* and *hemlock.* The principal part of the growers cultivate only peppermint and lavender, and some a few chamomiles. Mr. Arthur grows rather a larger number of plants than any other.

Pharmaceutical Journal for September 1850.

Anecdotes of Fox Hunting.

The owner of a pack of fox hounds once lost a very valuable gold watch in a severe chace, and desired his huntsman to proclaim the circumstance in returning home, and to offer a reward of two guineas to any poor person who might find it. His groom in the course of the evening brought him his watch, which he was, of course, much delighted to see, and to find perfectly uninjured by the fall. He took out his pocket-book, and, handing his servant a couple of guineas, told him "to take good care of the fellow, and to give him the reward he so well merited."—"What fellow, your honour?"—"Why, the fellow who brought the watch!"—"Nobody brought the watch, your honour."—"Then, where did you get it, John?"—"I picked it out of Patrick's hoof, your honour: he is the most carefullest horse I ever knowd!"

When a fox is taken alive, it is a common trick of his to feign being dead; in which state he will suffer a dog to pull him about, without betraying the least symptom of life, until a favourable opportunity arises for making his escape, when he is up and away in an instant; and when he falls into inexperienced hands, he generally succeeds, and effects his escape by the stratagem.

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LAMENESS IN HORSES.

By WILLIAM PERCIVALL, *M.R.C.S. and V.S.*

SUB-ACUTE LAMINITIS.

[Continued from page 617.]

THE few writers who have noticed this form or variety of disease, as well, I believe, as most veterinary practitioners who acknowledge its existence, denominate it *chronic;* a denomination I should feel very unwilling to disturb, did I not find it used in senses so dissimilar as to render the true meaning of the term, or that which is intended to be meant by it, at times doubtful. Now and then, *chronic* implies the stage of calmness and inaction, laminitis, whether it be *acute* or *sub-acute,* in its progress so commonly runs into; at other times, it is used to denote the form of disease we are now about to consider, viz. sub-acute laminitis. All this is ambiguous and confounding. In my opinion—and upon this I shall act here—*chronic laminitis* is but secondary—but a stage or sequel of one or other of the primary forms of the disease; whereas, sub-acute laminitis is an original affection as well as the acute, in regard to which it may be looked upon as a distinct species or variety. According to these views, it is evident that either acute or sub-acute laminitis may end in chronic, but that the acute cannot terminate in the sub-acute disease.

NOTABLE DIFFERENCES EXIST BETWEEN ACUTE AND SUB-ACUTE LAMINITIS. In neither form is laminitis the disease of the unbroke or unused horse. Now and then, acute laminitis will appear in the four or five-year-old horse fresh taken into work; more commonly it is seen attacking the horse while he is at work, at the middle period of his life. Sub-acute laminitis, on the other hand, is very apt to select for its subject the aged and worked horse. 2dly. Acute laminitis is the direct and immediate effect of work, hard either from its distressful character or from

its endurance: sub-acute, on the contrary, will make its appearance in the stable after the horse has been for some time living in a state of idleness, or indeed absolute rest. 3dly. The former makes its attack directly and immediately, or shortly after, the application of the excitant; whereas the sub-acute disease approaches so gradually and stealthily, that it is apt to be present some time before we discover its existence. 4thly. Acute laminitis is marked by great suffering and accompanying fever; in the sub-acute there is nothing of the kind, the lameness being the leading symptom. 5thly. The termination of sub-acute laminitis is—supposing we do not succeed in bringing about resolution—pretty uniformly in sunk or pumice sole; the disease rarely, in this subdued or mitigated form, ending in suppuration of the foot, and never in mortification.

SYMPTOMS.—Rarely does any complaint about this disease reach our ears until the lameness resulting from it is such as to render the further use of the horse either dangerous or impracticable; by which time, as generally comes out in the subsequent history of the case, it has existed for some days, if not for some weeks. The first observation made concerning its presence is that the horse does not in his trot step with his accustomed freedom and boldness, and that he flinches now and then in his tread, and stumbles. This is ascribed to shoeing, perhaps; in fact, to any cause but the true one. For some time his work is still persisted in, notwithstanding he goes so gingerly upon his fore feet—in the groom's phrase, "goes *scramblingly*"—until at length he becomes unsafe either to ride or drive. This leads to his being brought to the veterinary surgeon. Examination into his fumbling gait shews that it is not the short pattering step *upon the toe*, with the continual break into the canter, of navicularthritic disease; but, on the contrary, the elongated projection of the limb and measured and cautious setting down of the foot *upon the heel* of laminitic disease. And this at once discloses the nature of the case. It is sub-acute inflammation of the laminæ; and in confirmation of this, there will be, on nice examination of the hoofs, heat detected around the walls and upon the coronet; not to the degree present in acute laminitis, but sufficient for the purpose of diagnosis. There will also probably at this stage of the disease be present some disposition of the walls of the hoofs, which are observably shelvy or rimmy, to falling in; and the consequence of such failure in the wall will, to a greater or less extent, be sinking of the sole. These latter symptoms in particular shew the advance the disease has already made; at the same time that they throw no small discouragements in the way of the practitioner about to undertake the treatment of such a case.

TERMINATION.—By what has been just stated, the ordinary termination of an attack of sub-acute laminitis has been anticipated. Usually, the disease, in spite of all we can do, tardily proceeds to produce effusion of coagulable lymph between the sensitive and horny laminæ, which has the effect of detaching the coffin-bone from the hoof, leaving the latter to be forced down, by the weight upon it, upon the horny sole, which sinks and bulges in the manner afore described. Along with this detachment and descent of the coffin-bone there would appear to be some extravasation or congestion of blood; for when we lift up the foot and find the sole sunk, if the thumb be pressed upon the bulging part, a sense of fluctuation is imparted, leaving us to suppose that pus is collected underneath; whereas if, on such a supposition, the part should be punctured with a lancet, blood, and not matter, issues. Generally, there is no disposition to suppuration; nor, as was observed before, does this mitigated form of inflammation run into mortification. At the same time, let it be remembered that effusion is as well the termination of acute as of sub-acute laminitis; the only difference being that this termination is more constant in the latter, and usually takes place abstractedly of the accompaniment of suppuration.

It would be altogether abhorrent to the vital operations of the body to suppose that the descent of the coffin-bone should create any vacant space within the foot. No sooner is any interval in course of formation between the wall of the hoof and the coffin-bone, than lymph is effused from the sensitive and secreting laminæ to fill it up, and thus such effusion becomes a solid medium of union between the horn and the bone; and, in the course of time, by degrees, changes take place in it, converting it, firstly, from lymph into a fibrous substance of the nature of cartilage, a sort of *callus;* and subsequently into fibro-horny substance, which as time elapses approaches nearer and nearer to the nature of horn; though it never, I believe, quite acquires the dense compact texture of the old wall of the hoof, and on that account is to the latest periods of life generally at sight distinguishable from it. This established deformity of foot it is that constitutes what is called *pumice sole.*

THE CAUSES OF SUB-ACUTE LAMINITIS are not always evident. There can be no doubt but that certain descriptions of feet, such as large and flat and weak feet, are from their conformation predisposed to the disease, on the same principle as they are to acute laminitis. As one sort of foot is predisposed to naviculartritic disease, so is another to disease of the laminæ; and therefore it is that the excitant —which, in both instances is, in one comprehensive word, *work*— likely to produce laminitis in one case, naviculartritis in another, according as the foot to which it is applied be of this or that

character. But acute laminitis is very often referrible to a distinct act of over-work or excessive exertion, which is rarely the case in the sub-acute affection. We certainly find the disease sometimes creeping on the horse while he is at work; but then, again, sometimes we find it come on him during the time that he is idle or even absolutely at rest. Within these few years past I have had in my practice two remarkable instances of this.

An old horse, three-parts-bred, who had done a great deal of work in the royal stables, and who at the time he was growing stale upon his legs and feet was presented by the Queen to Col. C., after having in the Colonel's service, as an occasional charger, done little else but taking daily walking exercise for the space of about three years, became attacked with sub-acute laminitis, first in one fore foot, then in the fellow one. The disease was subdued, but returned, and returned after this again; and in this way, after being from time to time combatted with and mitigated, ultimately ended in pumice feet, through which the horse was rendered unserviceable, and, in the end, was destroyed. Another case of the kind occurred in Major B.'s charge. The horse, during the time his master was on the continent, had been laid up, *alias* turned loose in a box without shoes on his feet, to do nothing. During this state of idleness he was attacked, in the same insidious manner in which the Colonel's horse had been, with sub-acute laminitis; for which, after being twice so far relieved and patched up as to be enabled to attempt his work so far as walking for the space of a couple of miles or so went (to do his guard), he eventually became reduced to the same state—*pumice feet*—the former horse was, and met with the same fate.

DIAGNOSIS.—That the acute and sub-acute are different forms or varieties of laminitis has, I trust, been demonstrably pointed out: the one consisting in violent and destructive inflammation; the other in inflammation of much less intensity and force and of insidious origin, though hardly less disorganizing termination. There exists that broad line of distinction between them, that we are under no apprehension in practice of mistaking one for the other. Neither is sub-acute laminitis, in its stealthy beginning and tardy progress, likely to be confounded with naviculartritis; since the circumstance of the horse in one disease stepping short and quick, and going upon the *toes*, while in the other he makes every effort, in his walk even as well as trot, to elongate his step so that his feet may come to the ground upon the *heels*, will, along with other circumstances, be found sufficiently characteristic to distinguish the two diseases.

THE TREATMENT OF SUB-ACUTE LAMINITIS is ever undertaken with more or less disadvantage, from the circumstance of the disease, in the majority of cases, having got the start of the practi-

tioner; inasmuch as, on inquiry, it will prove, in all probability, to have been already for some time in existence. This, together with its peculiar character, will render the treatment different in some important respects from that which we find most effectual in the acute disease. Having to deal with an inflammatory action of but moderate intensity, though of insidious and persistent character, we in vain make attempts to suddenly arrest it or cut it short by large blood-lettings, such as affect the system. In acute laminitis, wherein fever runs so painfully high, lowering the system is an excellent practice; but not in the sub-acute affection, where there is no fever, and where the inflammation is of a character little more to be affected by a constitutional than a topical blood-letting, and, after either one or the other, will be pretty certain to relapse. Under these circumstances we find local abstraction of blood, and repetitions of it, to be in the end more effectual than one or two large depletions; while they are unattended with the disadvantage of depressing the system to no good purpose, and, moreover, will bear frequent repetition. Blood may be taken in moderate quantities from the plat veins; though it would be better to draw it more directly from the foot or feet. My practice consists in inserting *frog-setons*, the same as I would for acute laminitis; and not, until this has been done, determining on the further abstraction of blood from the foot. For sometimes, as I said on a former occasion, considerable hemorrhage follows this operation, and then further blood-letting, for a time at least, is not required; but should no amount of blood escape from the setons, one or both, in the foot which has not bled much I open the artery at the toe: the pastern veins affording too small an issue in general to invite having recourse to them. These topical abstractions should be persevered in every second or third day, according to the requirements of the case; and warm poultices applied upon the feet, of the same description as has been already recommended, in order to produce and encourage suppuration in the setons. Nor must we neglect to give a strong purge; which here, as in the acute, ought to be administered in the first commencement of the treatment. I do not approve at this early stage of blistering the coronets, though at a later period, blisters applied to the pasterns, and even fetlocks as well, often prove of signal service.

As soon as suppurative action is established in the setons, and they have continued for a couple of weeks or so to run freely, and the horse appears amending, we may withdraw them, and substitute cold and bracing applications for the poultices. Covering the hoofs with padded swabs, or compelling the horse to stand for some three or four hours daily in a bed of wet clay, made in a spare stall for him, will be found very beneficial, so long as there

is any heat remaining in the feet. As soon, however, as he begins to step without evincing much tenderness, the best practice is at once to put broad-web shoes upon his feet, and cover the soles either with leather or gutta percha, interposing between that and the sole the common foot-stopping plastered upon tow, as will be more particularly described in the treatment of pumice feet.

A CASE OF FRACTURE OF THE TWO FIRST RIBS.

By E. N. GABRIEL, *M.R.C.S. and V.S., London.*

THE subject of this case was a black Flemish cart gelding, sixteen hands high, the property of Mr. Thos. Green, junior, in whose possession he had been about twelve months. He was five years old, in excellent health, condition, and spirits; and was in constant hard work, which he did freely and well. He afforded a fair specimen of the usual characteristics of the breed, being narrow chested; not good but clean fore legs, flat feet, a large carcass, good loins, with powerful drooping quarters. He had never been amiss, or met with the slightest accident, while in the possession of his last owner. On the 30th of August last he was sent with a load of about thirty-eight hundred weight to Brentford. He had turned out of his road at an awkward corner to leave part of his load at Hammersmith, had returned, and was going on a perfectly level piece of road; when he suddenly fell lame in the near fore leg, and so acute was the pain, that he raised the limb in advance, shrinking back in his breeching, as if to escape the agony. He was immediately taken out and left at a stable at Turnham-green. His driver proceeded with another horse to Brentford, and, on his return late at night, bathed the shoulder, the apparent seat of the lameness, with warm water, and early in the morning returned and reported the accident to his master. He was seen during the day by his owner, and was led home in the evening; a removal that must have been excessively painful, as he took four hours to come the distance. The case being considered one of severe sprain of the shoulder, and my friend being rather fond of amateur practice, he was placed in a loose box, a dose of physic given, and warm fomentations assiduously persisted in. Under this treatment the animal appeared to be doing well, the pain and lameness being lessened; when, while waiting for more hot water to continue the fomentation, on the 7th of September he suddenly fell, and died.

The post-mortem examination afforded one of those extraordi-

nary revelations that even professional, much more therefore non-professional, persons are surprised and staggered to meet with:—The chest was nearly full of partially coagulated blood, and the two first ribs, or, according to the knackerian nomenclature, the two collar bones, were fractured about an inch and a half from the neck, and the one on the near side had punctured the upper portion of the lung, from whence the fatal hemorrhage had gradually been poured forth; and, probably, it is the fact of the upper portion of the lung having been perforated that accounts for the length of time that intervened before a sufficient quantity of the vital fluid had been effused to produce suffocation and death; unless, indeed, it be surmised that the displacement of the fractured portion did not take place till some time after the accident, and that then only did the laceration of the lung take place, speedily to be followed by death. At any rate, between three and four pailfuls were found in the chest, and, confirmatory of the first idea, a considerable portion was in the form of coagula.

But this was not all; for in the off rib a previous fracture had existed, the re-union of which had been very imperfect, accompanied by the rough circumambient deposit by which we universally find nature endeavouring to compensate for any lesion of continuity in the osseous structures: the only peculiarity here observable being, that this deposit was soft and spongy, possessing more of the character of mollities ossium than the usual hardness and solidity that the callus generally acquires; and, doubtless, owing to which it was that the unusual occurrence of a second fracture in the same part took place.

The cause of this lesion is altogether enveloped in mystery. The man who drove the horse declares most positively that no accident happened; that no blow was given, no fall took place; but that, after turning in from the road and again returning to it, the lameness suddenly and unaccountably appeared. Sceptical as I felt on first hearing this report, a very little reflection induced me to believe it, for I am not aware of any probable external cause, short of smashing the surrounding tissues, that could have produced it. Had the lesion occurred in an old animal, it might be said that the bones, as they are occasionally found to be in old age, had become unusually hard and brittle, and therefore a very slight cause might have produced the injury; but this occurred in an animal in the prime of life—indeed, before the usual age when the full amount of calcareous matter is deposited. Or we could, on the other hand, conceive so improbable an affair in a frame-work unusually soft and rachitic; but in this case all the bones, with the exception of the defective re-union alluded to, were perfectly healthy. Then, again, we know that occasionally in the human subject fractures

are caused by the excessive action of the muscles; but the portions of the skeleton to which this can happen are very few, being limited to those bones, and those prominences of bones, which form the more immediate points *d'appui* on which the muscles act: these are, in man, the patella, most frequently the seat of the accident, and more rarely the olecranon and the os calcis; or, in their relative parts in the horse, the stifle, the point of the hock, and the point of the elbow. This, therefore, is a cause that will not in the least help us out of our difficulty, the action of the muscles on the anterior ribs being uniform and moderate. The case must, therefore, be considered as an unique specimen of an extraordinary accident, and an addition to the hundreds occurring around us, where intense and fatal mischief has taken place without a single adequate symptom being developed to warn us of the consequences.

We have had the gratification of being recently informed, through the medium of THE VETERINARIAN, that some noise has been heard about a Charter, the spirit of which it is surmised may exist, but the substance of which has yet to be discovered. Had not this emanated from a correspondent whose communications have been stated by the Editor to be "practical and excellent, and doing him the greatest credit," it should be treated with that silent contempt that all such silly and impertinent remarks should be, which attempt to depreciate or undervalue any institution the object of which is useful and good. As it is, the question naturally occurs, Are the grapes sour? Could not a party possessing such "steady and acute observation," and "such unflinching determination," obtain the meed so justly their due? Or is it, that the man "who knows what to work at, who knows how to work, and who is possessed of the will to do it"—for such high eulogium is by implication modestly assumed—could not condescend to recognise and accept the boon which a gracious Sovereign had bestowed on a body of men progressing in knowledge and science; and without which, however much they might have individually struggled, they never would have been recognised, collectively, as professional men or gentlemen? The latter must be the reason, of course; or, if for a moment a doubt could exist in our minds on so delicate a subject, it could only arise from the slight differences that exist in the routine of practice, induced by the "great spirit of earnestness which characterises the true labourer in science," ringing the changes from nitre, tartar emetic, and camphor, to camphor, tartar emetic, and nitre (vide twenty-seven out of the forty prescriptions given in detail); and that of the generality of the members of the Royal College of Veterinary Surgeons, who, being expected not

merely to treat but to cure the majority of cases committed to their charge—are obliged, in order to do their duty to their employers as well as to themselves, to have recourse to energetic treatment, to active remedies, to the productions of botany and chemistry in all their improved forms and valuable combinations. But *n'importe*, at any rate, we poor every-day members of the body corporate have the satisfaction of having this one advantage over the erudite correspondent of THE VETERINARIAN, that, whereas the spirit of the Charter still exists, the spirits of his unfortunate patients appear all to have departed.

MORTALITY AMONG EWES; ATTRIBUTED TO POISONOUS PASTURAGE.

By J. K. LORD, *M.R.C.V.S., Tavistock.*

To the Editor of "The Veterinarian."

Sir,—As a disease somewhat novel in its character, and interesting in its details, has for some time held fatal sway amid the ewes of a large flock of sheep in this district, I shall feel obliged by your giving the few remarks I have to make on it a stray leaf in your Journal; and I shall also take it as an especial favour if some of my *confrères* will, after perusal, give their opinions on it. In order to make the narrative the more comprehensible, I will simply relate the facts as they occurred, from the period my attention was first directed to the sheep up to the present time; leaving any little plunges I may venture to make into the depths of theory to come in at the end of my account.

On a large barton (I think about 500 acres) in the occupation of Mr. J. Fairweather, situated in the fertile valley of the Tavey, about six miles from Tavistock, is kept a large flock of sheep, choice and well bred. It is deemed an excellent sheep farm, and for some years no sheep could be healthier than were his flock. About eighteen months ago, however, some ewes were now and then found dead. This was attributed to some of the many maladies sheep-flesh is "heir to," and thought no more about. Still, it did not cease; another and another died, from time to time, until it at length becoming a question of serious consequence, my attention was called to them. I made, as opportunities occurred, minute

post-mortem examinations. The sheep did not die rapidly; but one a week, and sometimes one a fortnight, or even three weeks. No previous illness whatever was manifested. They were always found dead in the attitude of sleep; the countenance being tranquil and composed, not a blade of grass disturbed by struggling; nor did any circumstance evidence that pain or suffering was endured. It was evident that the death was sudden. The general character of the post-mortem appearances was as follows:—

All the abdominal viscera perfectly healthy; only the liver in one or two cases being slightly congested, and, in a few, black and softened; gall-bladder usually full; but, as a general rule, the liver was healthy. Kidneys normal; and in somes ewes near their time of lambing the uterus and contents bore no trace of disease. The lungs, in every case but one that I examined, were quite sound; but the cavity of the pericardium was invariably found filled with fluid, thickened, and coated upon both its interior and exterior surfaces with yellow transparent lymph. The heart was pale and softened, and also coated with lymph. The brain and spinal cord free from any traces of congestion or effusion. In the sheep whose lung was diseased there was considerable effusion into the cavity of the chest; and the lung, where in contact with the pericardium, was quite consolidated. When I opened this sheep, about two hours after death (it was not cold), the pericardium was nearly bursting with fluid, and, as I have said, there was a considerable quantity of fluid in the chest. But it had not been exposed to the air one minute before all this fluid coagulated into pure transparent yellow lymph, just such as coated the heart and its covering. The cause of death was manifestly *hydrops pericardii*. So far so good. But what was the cause or causes in operation to produce this? Here was the puzzle. In the first place, all the sheep on the farm, save the ewes, were sound and healthy, and not one had died. No alteration, it seemed, had been made in their management differing from that of years gone by; and yet the ewes, without any visible cause of difference, were constantly being found dead. No sheep on the adjoining farms were lost. And had it been an infectious disease, the rest of the flock would have suffered. That it was not hereditary or constitutional in the ewes was proved by the fact of Mr. F.'s purchasing some ewes from Dartmoor, and their becoming alike diseased.

About 120 have thus died. Mr. Bickford, V.S., of Kingsbridge, was also consulted relative to the disease. I met him at the barton on several occasions. He had not, certainly, the same chance to make post-mortem examinations that I had; yet he was fully acquainted with every detail of interest. Despite all our cogitations, however, the mystery could not be solved or "the plague

stayed." We fancied the ewes must obtain something poisonous from the herbage, and the only place they could get any thing different from the other sheep was in the orchards, since there the ewes went at the lambing time, and occasionally through the summer. But so they had done for years before, and yet contracted no disease. Well, then! the orchards were the suspected spots, and it was deemed expedient to request Mr. Bartlett, a botanist, from Plymouth, to make a careful examination of the orchards, and give us his opinion thereon. The following is the substance of his report:—

The part of the estate to which the sheep unfortunately had access, where the predisposing causes of disease prevailed, was an orchard, planted in about the middle of one of our Devonshire valleys, having a gradual slope of about three-quarters of a mile in extent, from the high ground to the bed of the river, ranging about east and west; the hills on each side being constituted of argillaceous strata of laminated slate, which, although having an angle of inclination favouring drainage on the slopes, yet in the valleys often became flat or horizontal, and on which also accumulate the clays and masses of rock, in detached blocks, often to the depth of twenty feet; a state of things which gives the valley surface and soil a very rugged and unequal outline, the whole, at the same time, offering the greatest obstruction to regular drainage.

These are the spots selected for orchard draining in this county; the truth being lost sight of, that surfaces and soil for apple-tree growth require the most perfect admixture with atmospheric elements, and the freest outlet for the otherwise accumulating moisture, to prevent dampness and acidity, the result of the shade of the tree itself, produced by the fall of the leaf, &c.

On this estate these things had never been dreamt of before planting the orchards. The apple-tree, in short, as soon as its branches and leaves spread with the morbid growth of a dozen years, aids itself in the destructive process; the soil becomes yearly more poisonous, the roots soon decay, and the tree falls to one side, as we witness daily, while the herbage beneath and around becomes daily more unfit to sustain animal life. Numerous forms of poisonous fungi, microscopic and otherwise, are here at home, and nourished by the carburetted and other forms of hydrogen gas hourly engendered and saturating the soil; while on the dampest spots the less noxious portions of such hydrates are assimilated by the mint plant in the shape of oil; and which disputes with sour, poisonous, and blossomless grasses for the occupancy of the surface, mingled with the still more noxious straggling forms of the *ethusa*, occasionally the *angelica, vison, conium*, &c.

This state of things, brought into existence by this wretched and

barbarous mode of planting orchard vallies, usually reaches its consummation in about thirty years, and sometimes much less, as in the valley under notice. Thus it is, that such spots, often the richest in capabilities on the estate (the deep soil being the waste and spoil of the higher ground and slopes), become a bane to every form of useful vegetation; and, at the same time, are a hot-bed of luxuriance to every thing that is poisonous, destructive, and deleterious to almost every form of animal life. And such an animal as the sheep, while feeding among such herbage, would inhale a sufficiency of noxious gases, especially in summer, through the nostrils alone, to produce disease even in a few hours, though the herbage devoured should lie harmless in the stomach. But with regard to the sheep in the present case, we fear they had no choice in the matter, and were driven by hunger to feed, being shut into these orchards; and thus not only ate the poisoned grasses, but with every mouthful swallow a portion of the water engendering mint, the acrid crowfoot, ranunculus leaves, &c., surrounding every blade of grass; while the other essential elements of vegetable poison, the most virulent forms of agarici and their spawn, with other destructive fungi, were swallowed as a sauce to the whole. This fearful state of things, to which sheep had access, soon manifested its results; for although a hog or a badger might here fatten, yet to an animal so susceptible to atmospheric influences, unwholesome undrained land, &c., as the sheep, the organization forbids the assimilation of such food; and although a process of digestion goes on, yet its hydrous results (if we may use such a term) not only overcharge the blood with serum, but, through unnatural channels, causes effusion into the chest, heart, veins, &c., when its effects are soon manifested in sudden and quick dissolution, being found dead in the attitude of sleep.

Now, whether Mr. Bartlett be right or wrong—and that, direct experiment can alone decide—I can hardly help thinking, since Mr. B. knew the history of the case prior to examining the orchards, without knowing either from Mr. Bickford or myself the cause of death or the appearances presented after, that he "cut the coat according to the cloth." As a theory, it is certainly ingenious, and, as far as it applies to the vegetation, doubtless right. But with respect to the effects of these poisonous plants on the sheep, I am by no means decided. Certain is it that these sheep have been away from the orchards more than two months, and in this interval have been on dry grass land, and folded on rape; they have also been all bled and purged, and yet up to this time they continue to die as before. Vegetable poisons act as narcotics or acrids (stimulant?), or both conjointly, and that in a short space of time after being taken into the stomach. Again, had they inhaled car-

buretted hydrogen gas to the extent Mr. Bartlett supposes, it would have produced asphyxia, or at least stupor, and they would all have exhibited symptoms of disease. The fungoid theory I am inclined to view suspiciously: it is an easy means of escape when no other presents itself. Potato rot, cholera, indeed every thing mysterious and inexplicable, is at once set down to microscopic fungi. My lengthy communication forbids my making further comment, though I cannot help thinking that we are as far off the true solution of the mystery as ever.

I remain, Sir,
Your's obediently.

West-street, Tavistock,
Oct. 19th, 1850.

CONTRIBUTIONS TO VETERINARY PATHOLOGY.

By WM. SMITH, *M.R.C.V.S., Veterinary Establishment, Norwich.*

FOURTH CONTRIBUTION.

Dislocation of the Fetlock Joint, and Rupture of its external Lateral Ligaments.

History.—THE subject of this injury is a pony about twelve hands high, stoutly formed, with short strong joints. The person who had charge of him, on entering the stable early on the morning of the 21st of August, 1842, perceived by his appearance, and the disordered state of the place, that something unusual had occurred during the previous night.

The animal was covered with a cold perspiration, breathing quickly, and indicating other symptoms of uneasiness; and he informed me that, upon attempting to move him in his stall, the fetlock of the near hind leg gave way, it was bent under him, and turned inwards. He lost no time, therefore, in sending a message to me to attend, which I did promptly; and after hearing the foregoing statement, was surprised to find him standing tolerably firmly and naturally on this extremity. His present condition did not confirm the man's account of the matter, although eventually it was fully borne out.

Upon examining the fetlock joint, I found it swollen and contused; portions of the hair off, and the skin covering the joint

abraded. It had evidently been entangled in something, and with difficulty been removed. The fetlock had received a severe contortion and injury, but I did not at this time believe that it had been dislocated; for although I remained some while with my patient, and even moved him a little, no displacement of the bones of the joint occurred during the period of my stay.

Cause.—On looking round for this, it was soon discovered that the partition of the stall was broken in several places; one of which bore marks of a recent struggle, and, having hair adherent, clearly demonstrated that the fetlock had been entangled in this hole; and that the pony in his efforts to free it—which from the state he was found in, and from the strength of the partition, must have been considerable—had effected the injury.

I placed a bandage over the joint, and directed it to be kept moist with an evaporating lotion which I forwarded; gave a dose of cathartic medicine; and left my patient, telling the man I would see him on the morrow.

Complete Dislocation.—At noon, however, I was requested to attend again immediately, the messenger stating that the bones were quite out of joint. I lost no time in visiting him, and found the state of the case such as to fully justify the groom's remark. The pastern and foot are now turned inwards, having an inclination upwards, the inferior condyle of the metatarsal bone supporting the little weight thrown on this extremity. The nature and extent of the injury are no longer problematical. It may be, I deem, considered a complete dislocation of the fetlock joint, the external lateral ligaments being broken, and it is probable, also, that the capsular ligament has given way on this side.

The retention in their proper places of displaced bones of the limbs is much more readily attained when dislocations occur in small than in large animals, and consequently heavy ones; and, considering the small size and little weight of this animal as circumstances favourable to a cure, I proceed to the

Reduction of the displaced bones, which, from their situation and connexion, was easily accomplished; and to adopt means for their *retention*, which was attended with far greater difficulty. Splents, first of leather and then of wood, were fixed, and firmly bound on the joint with long stout bandages; but it was found impossible to retain them for any length of time in their proper position: they were fixed and re-fixed several times in the course of the day and the succeeding one; my patient so frequently shifting his position, and almost as frequently displacing them, that the object sought for, viz. the retention of the reduced bones in their places, was completely frustrated. That these measures were ineffectual to

keep the luxation reduced was to me disagreeably apparent; I therefore had constructed the apparatus, of which I have sent you a sketch; and, in addition to the description of it which follows, I wish to observe that the iron supporters and plates were made soft by winding fine tow round them, and afterwards covering them with leather.

Fig. 1

Represents the outside of a horse's leg, with the apparatus fixed.

A, One of the supporters of the leg, extending from the ground surface of the foot to within a little of the hock, made of stoutish iron, curved and adapted to suit the convexity of the fetlock-joint; its upper portion, B, being rounded and turned downwards to prevent abrasion, and to form a loop to receive and keep a leathern strap in its place; its lower having a screwed end, which is passed through a hole in the projecting portion, C, at the side of the shoe, and firmly fixed by means of a nut, D.

E, A plate of iron, rivetted on the supporter, having a convexity on its external and a concavity on its internal surface, to receive the joint.

F, A leathern strap, with buckle attached, to be fastened round the leg.

Fig. 2.

A A, The corresponding internal supporter.

B, The shoe, unattached, shewing its two lateral projections, C C, containing holes for the reception of the supporters.

Fig. 1.

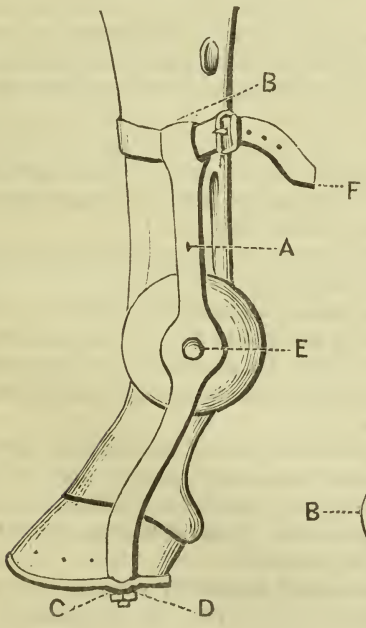
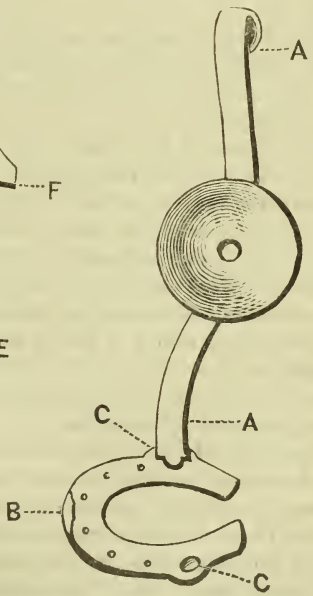


Fig. 2.



Treatment, August 23*d.*—This morning the shoe is nailed on the foot and the apparatus fixed; dossils of fine tow are placed on such situations between it and the leg as are likely to receive undue pressure; a long bandage is wound round the leg, enclosing all, and kept moistened with a cooling lotion: he is tied up so as to prevent his lying down. At night I see him again; no displacement has occurred; my patient moves from side to side in his stall with comparative facility. The complete success of the experiment is an agreeable surprise to me.

24*th.*—Upon visiting him this morning I find him recumbent; he has contrived to unfasten himself; the bones, however, appear to be in their proper situation. No unfavourable symptoms present; he now rises with little apparent effort. I did not direct that he should be prevented from lying down again, as this did not occasion inconvenience. He throws a fair proportion of weight on this limb, and moves without disturbing the position of the joint.

25*th.*—I find him this morning again down; the attendant reports that he rises with little inconvenience, of the truth of which he gave me a proof by rising and moving without much pain or difficulty. The superiority of this method of treating dislocated fetlock-joints is now, in my mind, established. From this period to

Sept. 24*th.*—All goes on well, when the apparatus is removed and a bandage simply is applied: there does not appear to be much thickening of the joint; he walks and trots without shewing decided lameness.

28*th.*—To-day he is fired, and on the following day blistered. Deep perpendicular lines, about three quarters of an inch apart, are drawn with the iron over the joint; they are made deeper on the outside than on the inside of the joint.

Oct. 21*st.*—An adhesive plaister of the usual kind is applied, and he is turned out for the winter.

He does not come up for work till June 6th, when he is shod, and goes quite sound. There is scarcely any alteration in the size or appearance of the joint—save the blemish from firing—worth notice; he resumes his usual employment, and continues working sound for years afterwards.

Remarks.—Dislocations, either general or particular, have seldom been noticed in English veterinary works, our periodical literature, perhaps, excepted; and, until the publication of Mr. Percivall's admirable work entitled *Hippopathology*, we have had little or no information on this subject.

It would seem, then, that other veterinary writers have either considered this class of injuries of so rare an occurrence, or so

unmanageable and incurable a character when met with, as to render it little worthy of remark.

Mr. Percivall, in speaking of dislocation of the fetlock-joint, says, "we are informed by Hurtrel D'Arboval that, notwithstanding the little that has been said about it, 'it happens more frequently than others.' He gives us, however, little hope of restoring the case."

It does not follow, I think, that because we have not any, or but few, recorded cases of this kind, that they should be considered injuries of very rare occurrence or irremediable ones; for, in addition to the above high authority, other respectable testimony can be adduced corroborative of this fact—that they are not of such unfrequent occurrence as might, *à priori*, be conceived.

In conversations that I have had with veterinary surgeons practising in this county, since the foregoing case came under my observation, I have been informed that several cases of this nature have happened in their practice, all of which have been caused by mechanical injuries, such as the entanglement of limbs in gates, &c., some of which have been successfully treated.

Although the case I have described occurred some eight years ago, the little information we have on the subject of dislocations in the horse induces me to hope that this communication will not be the less acceptable on that account.

In conclusion, I trust that, if it does no more than direct attention to this neglected division of veterinary surgery, it will not be found altogether useless to your readers.

November 15, 1850.

ON THE STANDING AND RESPECTABILITY OF THE VETERINARY SURGEON.

By a Sporting Surgeon.

To the Editor of "The Veterinarian."

Sir,—Having seen scattered through the various numbers of The Veterinarian numerous remarks upon the standing and respectability of the veterinary surgeon, will you allow me, as an unbiassed and uninterested observer, to make a few remarks thereon? Situated as I am in a populous sporting neighbourhood, and mixing daily with the first sportsmen in the country, I have observed with pain the little—the very little—social estimation in

which the veterinary surgeon is held; not in one solitary case alone, but, as far as my observation has extended, almost universally. Possessed of a classical education, as the veterinarian ought to be, and being required to go through an extensive course of education, he ought to be able to take his station with the best gentleman in the land; to be the companion of the clergyman, the surgeon, the lawyer, and the country gentleman; in short, to rank as other liberal professions do. But is this not the case? some may ask. I am sorry to say "it is not." The veterinarian is oftener found the companion of the stud groom and bailiff than of the gentleman; and often and often have I seen at the house of a sporting friend (whose surgeon is admitted as a friend and companion) the veterinarian, a man of talent and education, lunching in the servants' hall, in the company of the servants, or, at best, thinking himself highly honoured by taking a glass of wine in the butler's pantry. That this is almost entirely the fault of the veterinarian himself, there can be no doubt. The greater portion of your profession undervalue themselves. They imagine they shall cultivate the goodwill of the gentleman by "truckling" to him. They seem to think that, if they speak to him without a touch of their hat, it would be an unheard-of crime; and then, after all this, they talk of their "despised" profession! Certainly, I should be the last in the world to instil arrogance into the mind of the young veterinarian. But let him always, and in all places, endeavour to conduct himself with a spirit of gentlemanly feeling. Let his deportment be respectful, but yet remembering what is due to himself as an educated man and a gentleman; and, above all, let him firmly resent any attempt to push him in the back-ground. Let him do all this, I say, and, depend upon it, he will be thought far more of than by the "truckling" system of which I am complaining, and render both himself and his profession more respectable than they are.

Should these few remarks not be deemed out of place, you will oblige an old subscriber and ardent admirer of the veterinary art by inserting them in your widely circulated Journal.

I am, Mr. Editor,

Your well-wisher,

A Sporting Surgeon.

REVIEW.

Quid sit pulchrum, quid turpe, quid utile, quid non.—Hon.

THE HUNTING FIELD. *By* HARRY HIEOVER, Author of "The Stud," "Practical Horsemanship," &c. London: Longman and Co., Paternoster-row, 1850. Small 8vo, pp. 221.

HARDLY have four short months flown over our head since we were, upon paper at least, riding alongside of our friend Harry Hieover "on the road," listening to instruction tended to his friend and pupil on *that* practical branch of equestrianism, with the delight which conviction of the utility and truth of advice never fails to impart to the mind into which it is poured in such pleasing manner and felicitous expression as Harry has the command of, and the good sense to make use of;—we repeat, hardly have four months elapsed, and we find Harry now inviting us to take a ride into "the hunting field" with him, with a promise that we shall there hear "the best advice he can give" on the subject of riding, not *with* but *to* hounds: there being, as our reader will learn as we proceed (should he not catch our sporting phraseology at once) all the difference in the world, in the meaning conveyed by the prepositions *with* and *to* in the sense in which they are here introduced. Any snob who happens to own a horse, or to have in his purse a couple of guineas to hire "an 'unter" for the day, if he can ride at all, is able to ride *with* hounds; but it is only the experienced sportsman—in our author's language "the hunting man"—who knows how to ride *to* hounds. In this sense, riding-a-hunting becomes a branch of knowledge acquired by the favoured one alone to whom it comes, from his fortunate position in life, instinctively, or, at least, imperceptibly, through imitation and practice, that being the ordinary way in which knowledge of this description is attained; nor, indeed, did we know of any other channel through which it could be acquired until the publishers had put into our hands "The Hunting Field, by Harry Hieover." Even to the cockney 'unter, who turns out in his unsoiled scarlet and his apology

for jack-boots to save his pantaloons, to know, whenever the inspiring moment of a "find" or a "turn out" or a "see-ho" shall arrive, *when* to ride, and *where* to ride, and *how* to ride, must be something consolatory at such a critical time; then how much more must such knowledge be desired by the uninitiated but aspiring tyro, ardent with all love for the chace, and eager to enter into the fullest enjoyments of it!

It has been said, speaking of fox-hunting, even by fox-hunters themselves, that while no sport can equal it in the ecstasy of enjoyment it creates, as a subject for the pen few are less excitive of interest. We are not going to tax this remark with being devoid of truth. We know too well ourselves, how little comparative gratification we derive, in general, from accounts in the public prints of long runs and hair-breadth escapes over awful countries, and so forth. But let us ask any *hunting man*—any man who is by love and profession a fox-hunter—whether, when he first read that part of the work of that king of writers on hunting —Beckford—wherein he describes the chase, there were not moments when he could fancy himself actually in the field, *finding*, and *running*, and *hark-forwarding* and *view-hollowing*, and *screaming* and *whoo-whooping*, with all but all the enthusiasm the reality itself would have inspired him with. Why, such a chapter as Beckford has penned on the chase is enough to raise the gouty fox-hunter upright in his bed and make the octogenarian forget his years! It is the man who has never been a hunting, the man devoid of all taste for hunting, the *pseudo hunter* alone, that could fail to feel the highest pleasure in the perusal of Beckford's work. Nor do we anticipate that any feelings save such pleasurable and approving ones will arise in the mind of the reader of the following extract from the work before us; indeed, should he who reads be himself a fox-hunter—and most of our craft are, or ought to be, genuine ones—we bespeak at once for our friend Harry commendation for every line of the following vivid picture of a bit of true sport, representing moments when, besides riding himself, he was engaged in playing, ever and anon, the part of Mentor to his Telemachus in the field.

Time and opportunity now serving for a day's fox-hunting at a "regular fixture," Harry, under the guise of enjoying the pleasure

of his company, invites his friend to come and spend "what time he could" with him in the country; his real motive for so doing being a consideration that it would be less awkward for him—he being horsed and equipped ready to take the field—"to shew any want of hunting habits in a strange country than in his own." Accordingly, with four horses, his friend pays him a visit, and, after a day or so, agrees to accompany him to hunt with the —— fox-hounds; his friend requesting Harry to ride that day a grey horse of his, concerning whom serious doubts as to capability, &c., had been of late entertained. They were rather early at the fixture, the hounds only coming up as they got there. The interval before the arrival of the "master" was passed in Harry discussing the merits of the huntsman, the whips, their horses, the hounds, &c.; with sundry remarks, often facetious but never ill-natured, on the different hunting characters as they arrived at the meet, when the chat was suddenly broken off by——

"But here comes the master of the hounds!—so we will offer our salutations to him, and then attend to our business." So, moving their hats to him, "in virtue of his situation as master of the pack"—"a piece of courtesy no well-bred man omits on like occasions"—a conversation springs up:—

"You are on a new horse, I see, Hieover, and a very fine one he is."

"He is merely one I am trying for a friend, my lord."—"Well," said I to my friend, "that is no fib; and if the grey exposes himself, his being 'on trial' will save the credit of your stable."

"'Come,' said I, 'now do throw away that beastly weed you have been puffing this half-hour, for this cover, which is not large, is sure to hold a fox; and when he does go from here, you will have enough to do with your horse, I can tell you, without blowing a fire under your nose.'

"The Master now gave a wave of his hand, and the Huntsman rode gently towards the cover. Not a hound stirred from his horse's heels, till, having come close to the hedge, 'Yoi over there; loo in! loo in!' sent every hound on to the hedge, and, dropping on the other side, not one was visible. The Huntsman now trotted to a gate leading into the cover, and only the field was to be seen. 'Yoi! wind him there;' halloos the Huntsman.

"'Loo on, loo on, hounds!' cries the First Whip, finding two or three couple rather dwelling at the lower end of the cover. A

hound near us leaps out of the cover and canters up its side, probably finding it a pleasanter path to the Huntsman than through a close cover.

"Up comes the Second Whip at the rate of twenty miles an hour, his whip-thong ready for use. The hound caught sight of him, and prepared to spring into the cover. 'Ravager, Ravager,' rated the Whip; but the first word was enough, and Ravager was safe over just as the Whip got to the spot he leaped from. A whimper is now heard from a well-known sure-finding hound. 'Yo-oul-yo!' then sounded old Hannibal, throwing his tongue something like the deep toll of St. Paul's.

"'Have at him, there!' cries the Huntsman. 'Hark, Hannibal, hark.'

"'Hoik together! hoik together, hoik!' cries the First Whip, cantering up the side of the cover.

"'Hark cry, hark cry, hoik,' says the Second, with a slight crack of his whip to a few hounds that did not fly to the halloo as quickly as he wished. 'Cum up,' says he to his horse, giving him a haul up and the double thong behind the girths. Crash goes the hedge, and in goes the Whip at the bottom of the cover.

"'Whoo, whoo!' shouts the Huntsman, who has just got a view of pug.

"'Hark, hollar! hark, hollar, hoik!' cry both Whips together; one to the body, the other to the tail hounds of the pack.

"I now saw my friend gather up his reins, clap spurs to his horse, and off he was going in a canter. 'Hold hard!' cried I. He pulled up and came back. 'Where the deuce was you off to?' said I.

"'Why, did you not hear the Huntsman?'

"'I did,' said I. 'He viewed the fox, and wished to collect his pack, in which you hear the Whips are assisting him.'

"'Well,' said my friend, 'I have heard you say a man should be on the alert to get off in a good place. The fox is viewed, and here are we standing still.'

"'My good fellow,' said I, 'a fox viewed *in* cover is not exactly a fox viewed *out* of one; and if the cover was a large one he might be viewed a dozen times, and require a pretty good share of mobbing before he would be got out, though this is not the case here. Where can we be better? We are out of sight, though we command the part where a fox would, nine times in ten, break. We are down wind, so can hear all that is going on; and as we can't drive pug out, though the hounds will, here we had better remain, unless we see good reasons to move.'

"Shortly after we heard the full chorus in cover coming towards us. 'Turn your horse's head from the cover,' said I, 'and be silent; so, if pug wishes to go, don't let us stare him in the face.'

By us went the pack inside the cover. 'Now for a break to the right,' says I. Near the top of the cover over jumped Charley; the clean white tip of his brush, high carried, shewed him no tired or draggled one. I saw my friend's mouth open like the new gutta percha busts sold as toys. 'Be quiet, pray do,' says I.

"'There goes the fox,' said my friend.

"'And we will go after him, if you don't send him back,' replied I. Pug had now got a field off, and, on his jumping the hedge into the next, 'Now, come along,' said I; and, galloping up to where he broke cover, I gave a 'Tally-ho, away!' Ditto, of course, from my friend. 'Now be quiet,' said I; 'we don't want to call away the hounds, but to let the Huntsman know Charley is off. The hounds had, however, heard the halloo; over came a couple and a half, and raced up to where we stood. 'Yo doit, Termagant!' said I. The old bitch looked at me, and I could fancy said, 'You know the line; come, cap us on, and don't give me the trouble of picking it out.' 'It won't do, old lady,' said I. 'Yoi doit, there!' The old bitch put down her nose, 'owned' it, and away she went. By this time over came the pack, and over came Will: I just waved my hat on the line. 'Now,' said I, 'you see we have not lost a place; let us see if we can keep it.' Coming to the fence, I did not see the couple and a half that had gone off beyond it. 'Ware hounds,' cried I to my friend: the words were scarce out of my mouth before I saw the old lady streaming away stern down, leading the other couple. 'Go along,' cried I to my friend, making the same hint do for the grey, to whom, remembering his former propensity to baulk, I gave a refresher as hint conclusive. He took the fence beautifully; the body of the pack, who had regularly raced along a headland, taking the same fence in their swing.

"'Yoik forward, good lads!' screeches Will, driving Claret through a bullfinch to the left of his hounds, to avoid being too close on them.

"'Keep to the right,' cried I to my companion, 'or you'll be among them if they turn.' Reaching the second fence, the leading hound threw up for a moment, then hit it off, and went away like a rocket.

"'All right,' said I; 'he is off for Redlands; we shall have a taste of the brook presently.' The short turn the hounds had made let all the field up. We were now going a clipper down hill to the meadows, the brook before us: in went old Termagant, still leading.

"'Over he is,' cried Will, 'close to my side.' The clergyman I had mentioned had, as usual, got in front; over his horse went like a flying fish, almost skimming the water; ditto Fearon one hind leg just, and only just, breaking the opposite bank; young Roberts gave his hat his usual thrust down on his head, his old

cripple grinding her teeth, but taking it clear and clean; by his side went Captain Oliver, his legs almost touching the water. My friend rode at it manfully, but held his horse too hard; he just and barely did it. Now for a souser, thinks I, on grey; but I suppose, from some lessons he had had, he went at it racing, and cleared it well, but making it a regular tilter from jumping high and wildly. Never was a finer *on tapis* for the next twenty minutes, my friend going like a trump: the grey now began stretching out his neck; and, stretching out my legs, I eased him all I could to keep in any thing like a place.

"'It's pretty near U P, White Surrey,' said I. Looking towards my friend, I saw he was letting his horse make a spread eagle of himself; but he was not near enough to speak to. I had been nursing grey up a firm headland. A post and rail ran across part of the field, which most took. Grey just got over, hitting it hard. My friend, to avoid the timber, had gone out of his way, and was now powdering across a deep and heavy ridge and furrow to make up for lost ground. His horse went slower each stroke, till he got into nearly that kind of out of time canter, the last resource of a beaten horse. He tried him at the next fence, but he stopped fairly, or rather unfairly, 'pumped out.' I trotted up to him.

"'Why,' cried my friend, 'the grey is worth a dozen of this brute: he is regularly knocked up.'

"'He is blown, I grant you,' said I, 'and no wonder. But all the steel is out of grey; he could not go two fields further. We have done our best; the best can do no more.'

"'I suppose,' said my friend looking somewhat rueful, 'we have only to go home.'

"'I do not think,' said I, laughing, 'we can do any thing else, and luckily we have not far to go. Your horse will be all right in a few minutes; but grey is regularly sewed up, and won't want such another taste for some time.'"

The lengthy extract we have just concluded cannot fail to convince its reader, whatever Harry may on a former occasion have appeared to him *on the road*, that he is completely at home in "The Hunting Field." The above description is a bold and animating one; every word of it bears the impress of *natural;* the characters figuring in it are faithful portraits; added to which, the advice contained in it is judicious and well-timed. Every tyro fox-hunter needs such a guide. Indeed, we would recommend every one, aspiring to become *a hunting man*, to read the work through ere he ventures to make his appearance in a character at once so trying and so perilous.

Home Extracts.

On Murrain, or the Vesicular Epizootic.

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(Premium—Ten Sovereigns.)

[We may venture to predict, that our readers will feel themselves no less pleased and edified by the perusal of the following paper than they have already been by that of the large extracts we have made from the one, by the same author, on Pleuro-Pneumonia in Cattle, in our Numbers for October and November last.—Ed. Vet.]

The "vesicular epizootic," also known by the name of "murrain," or "malignant epidemic murrain," is not confined to cattle alone, but shews itself among the other cloven-footed domesticated animals, such as sheep, pigs, and goats. The horse and the dog are, however, exempt from its attacks. It appears to consist in a specific inflammation of the mucous membranes and skin, and is characterised by the appearance of vesicles, or little bladders, containing a colourless fluid, on the inside of the mouth, and on those parts of the skin uncovered by hair. It is attended by more or less constitutional fever. Although indicated, for the most part, by local symptoms, it is an affection of the whole system, as is clearly shewn by its propagation from the mother to the fœtus, which is occasionally born with all the symptoms of the disease fully developed.

The vesicular epizootic belongs to the class of *exanthematous* diseases, and exhibits, in a striking degree, most of their remarkable peculiarities. Hence it is accompanied and ushered in by febrile symptoms; it passes through various and definite stages; is attended by eruption; seldom occurs more than once in a lifetime; is contagious; its progress cannot be arrested; and an interference with its natural course is almost always productive of injurious consequences.

The form in which the disease is best known, and in which it lately appeared in this country, is that of an epizootic. It accordingly assumed several characteristic features; it spread over large tracts of country, attacked at the same time many animals, pre-

sented the same general symptoms, and followed an analogous course.

History.—The history of such diseases as the vesicular epizootic is not only an interesting subject of investigation, but it also leads to a fuller and more accurate knowledge of the true pathology of the malady. Eruptive diseases existing epizootically were known in remote antiquity. Two of the plagues which were sent upon the land of Egypt to punish the obstinacy and disobedience of Pharaoh seem to have belonged to this class of maladies. Similar diseases were observed and recorded by the Greeks, and also by the Romans. During the dark ages which intervened between the fall of the Roman empire and the dawn of European civilisation, they appear to have occurred, especially in Italy and other parts of the Continent. About the middle of the eighteenth century, an aphthous (eruptive) disorder prevailed in Moravia, and also in many parts of France; and about the same time Britain was visited by a similar disease. About the year 1810, an analogous affection extended itself over the greater part of France, and in some districts was very severely felt, and many cattle perished. In 1837, an aphthous affection appeared in the Vosges, and shortly after prevailed extensively in many of the Swiss cantons. It existed in Auvergne early in 1839, and subsequently we find that it had spread over most of the south of France, and was also rapidly extending itself in the northern provinces.

This epizootic, which bears the closest resemblance to the one which almost immediately after attacked the ruminants in our own country, appears to have differed materially from the diseases which had previously devastated France, Britain, and the western parts of the Continent. These older epizootics were virulent and fatal in the extreme. The aphthæ which attended them were, in many cases, merely an epiphenomenon, or accidental occurrence, forming but one of a train of aggravated symptoms; the eruption was followed by indolent, unhealthy, and formidable ulcerations, and the fever attending the disease was of a typhoid character of the worst type. On the other hand, in the more recent epizootic, the cases have been much milder; the recoveries, almost without exception, favourable; and the aphthæ have constituted almost the only symptom of the disease.

The vesicular epizootic first appeared in England in the spring of 1839. It was first observed in some of the south-eastern counties; but, whether it sprang up spontaneously, or was imported from the Continent, does not seem to have been clearly ascertained. It is, however, extremely probable that the malady was brought from abroad, either by the introduction of cattle, or of the skins of animals that had died from the disease, or been slaughtered while

under its influence. But, whatever may have been the mode of its origin or introduction, it soon made itself widely known throughout England, and rapidly spread both to the west and to the north. Within a year of its first appearance in England, it had committed extensive ravages in Ireland, and had engaged the attention of many practitioners north of the Tweed.

The severity of the vesicular epizootic has varied much in different parts of the country. In some parts of England, and especially when it first appeared, fatal cases were not of infrequent occurrence; the duration of the disease was long, and the cases tedious and troublesome. More recently, however, it has become of a less malignant type, and also of less general occurrence. In Scotland it never assumed such a formidable character, nor diffused itself so widely as in the southern parts of the island. Indeed, in some districts the malady was exceedingly mild. A slight lameness and tenderness of the mouth were observable for some days, and then the animal was well again. In many such cases the loss of condition was but slight, and was compensated for by the subsequent improvement; for the disease in this mild form seemed to increase the vigour of the system, and the tendency to grow and to accumulate fat.

After the disease had existed in the country for about two years, its virulence gradually abated, and the number of cases also became less numerous. This phenomenon seems to attend most epidemic and epizootic maladies. At first their malignity is very great, and their ravages very general; but after a time the cases diminish in severity and in frequency of occurrence, and the disease appears to lose its power of propagation and many of its epizootical characteristics. The explanation of this may be, either that the proximate cause has lost its energy, or that the predisposition to receive and mature it has passed away. In the vesicular epizootic, and other eruptive fevers, animals having previously had the disease are less liable to a second attack; and thus, when the disease has existed in any locality for a considerable time, the number of cases naturally becomes much diminished.

During the last few years, cases of the vesicular epizootic have been of comparatively infrequent occurrence; and, although the disease has appeared in a few stocks in various parts of the island, it has seldom tarried long, or prevailed over any great extent of country. During the spring months of the present year (1849), however, the disease appears to have been more general than usual, and it is at present reported to exist in many parts of Scotland, and to have spread extensively both amongst cattle and sheep.

Causes.—The causes of the vesicular epizootic, and the circumstances which lead to its prevalence, or which retard or arrest its

progress, still remain to a great extent unexplained. The variety of circumstances in which the disease occurs, and the ever-changing influences which appear favourable to its development, present very serious difficulties in the way of etiological investigations. It appears inexplicable why a disease should exist and extend itself under the most opposite conditions; yet such is most remarkably the case with this epizootic. It has spread alike in the coldest and warmest weather, in the wettest and driest situations. It has existed in all localities, and has been but little affected by varieties of situation and exposure. Differences in feeding have made no difference as to its progress or severity. Animals in good condition and well tended have fallen victims to its attacks as well as those which were starved and neglected. It has appeared in the cleanest, driest, and best regulated byres, as well as in the most foul, damp, and badly ventilated hovels. Cattle at pasture have suffered from it equally with those in courts and byres. It has attacked indiscriminately animals of all ages, of all temperaments, and of both sexes.

Since, therefore, the vesicular epizootic has existed and propagated itself in the midst of such numerous and even antagonistic circumstances, it is evident that the circumstances in themselves could have but little effect, or at most but a secondary effect, in producing or extending the disease. Indeed, no external circumstances or influences, such as heat, cold, wet, drought, exposure to winds and weather, bad housing, want of ventilation, filth, neglect, starvation, or any sort of bad management are in themselves adequate to generate the disease. But although not one of these conditions, or even several of them put together, could produce vesicular epizootic, still they act in conjunction with the more immediate exciting causes, and induce, by the depression of the vital powers, a state of body favourable for the reception and development of the germ of the disease, and in so far they may be considered as *remote* or *predisposing* causes.

These causes not only increase the susceptibility to receive the disease, but also augment its severity when it does occur. Moreover, atmospheric changes, as electrical and meteorological influences, from their powerful effect upon the animal organisation, may, also modify, to a certain extent, the nature of the disease, and may perhaps, have some effect in producing that wide difference observable in the intensity of the disease as occurring at various times and in various localities.

The *immediate* or *exciting* causes of the vesicular epizootic are less numerous and perplexing than the remote or predisposing ones. Of the exciting causes, contagion appears to be the most active and effectual. To its influence the great majority of cases which

have occurred in this country may be traced. The fact of a few instances of the disease having sprung up independently of contagion, is no argument against its general diffusion by contagion. Such a phenomenon is observable in many epidemic and epizootic diseases, of whose contagion no doubt can be entertained. It has frequently occurred in the progress of small-pox; and, as Dr. Watson remarks, "If small-pox be produced by contagion alone, and yet the mode in which the contagious matter has been communicated eludes sometimes our closest scrutiny, then we must conclude that the same thing may happen in *other* contagious diseases, of which the contagious property may not be so strong or so obvious." And this ought surely "to warn us," says the same author, "against the inferring of analogous disorders that they are necessarily not contagious, because we often fail to discover any way in which the poison could have been applied."

As an argument against the contagion of the vesicular epizootic, it has been asserted that animals, placed in circumstances apparently the most favourable for the production of the disease, have sometimes altogether, or for a time, escaped its attacks, while the rest of the stock have been affected. It has been further asserted, that repeated inoculations have failed to produce the disease in sound cattle and sheep.

But these arguments only prove that the disease is more readily generated in some states of the constitution than in others. The indisposition to receive and mature the virus, whether communicated by contagion or more directly by inoculation, may in many instances have resulted from the animals having previously been affected by the disease. This immunity from a second attack is explained, according to Professor Liebig's ingenious theory of the propagation of contagious disorders, by the supposition that the occurrence of any such disease exhausts and destroys for a time that principle in the blood, which he believes to be essential for the reproduction of the virus and the existence of the disease.

The strongest evidence in favour of the contagious nature of the vesicular epizootic, is derived from its history and progress; its slow and gradual spread; its appearence among a stock or in a district being in very many instances traceable to communication with or the introduction of diseased animals; its affecting animals of all ages and under all circumstances; its frequent occurrence in and return to the same neighbourhood, and at the time of large fairs; its scarcely ever having existed in certain localities, and in certain farms, where strict and efficient means were adopted for keeping the stock out of the way of contagion. Besides these sources of evidence, numerous well authenticated and incontrovertible facts, derived from the observation of many cases, might

also be adduced as proving that the disease is able to communicate itself to animals previously in a sound and healthy condition.

Not only is the disease capable of communicating itself by contact or proximity, but the specific poison is actively diffusible; it spreads to considerable distances without becoming innocuous by dilution, and is retained by *fomites* (substances capable of absorbing and retaining contagious effluvia) for a long time without its virulence being abated. In proof of this, it might be stated that cattle have contracted the disease from being driven along a road over which diseased animals had passed some time before; and also that, in all probability, contagion can be transmitted to healthy stock by the clothes of herdsmen and others being impregnated with the virus evolved from the bodies of animals affected by the disease. Distinct evidence has also been brought forward that the subtile pollen-like principles of the disease have been wafted over considerable spaces, and have sown themselves in some new spot previously unvisited by the malady.

The time that intervenes between exposure to the influence of contagion, and the first appearance of the disease, varies much in different cases, and is doubtless modified by the intensity of the specific poison, and the idiosyncrasy of the individual. The symptoms have sometimes appeared within three days, and sometimes not for a week, after the application of the exciting cause.

Cases are recorded in which animals, contrary to the general rule, have had the disease more than once. Such cases, are however, of so infrequent occurrence, that we may safely assume, that the fact of an animal's having been affected once, protects it ever after from a second attack. This being an ascertained truth, we are naturally led to consider the advantages and disadvantages of *inoculation.* As long as there is the slightest chance of their escaping the disease, it would evidently be the greatest folly to inoculate animals unaffected by it. But when the malady has appeared among a stock, and when we apprehend that it will in all probability affect animals having even the most distant communication with the sick ones, it then becomes a question whether it may not be advisable to inoculate the whole of the intact stock with matter taken from a *mild* case. The malady thus excited has been ascertained to be less severe than that produced in the natural way, the symptoms being usually less aggravated and the duration shorter. Such being the case, it is probable that in districts where the disease is of a malignant type, inoculation might with advantage be tried among that part of the stock as yet unaffected. Even although the animals have been previously affected in the usual way, the inoculated or milder form of the disease gets the start of the severer and more complicated type, and, running its

shorter and more easy course, mitigates the sufferings of the animals, and lessens the loss of the stock proprietor. In these cases, the advantages of inoculation are greater than its disadvantages, and in such cases alone is it to be recommended.

Symptoms.—The symptoms of the vesicular epizootic are tolerably uniform, but vary much in degree. In some cases the attack is so slight as scarcely to attract attention, and does not interfere with the feeding, or affect the condition of the animal. But in others, the disease assumes a serious character; the animal is unable to stand, and cannot eat; he groans and grunts with pain; his strength is reduced by the typhoid fever; he becomes a perfect skeleton; and weeks, and even months, elapse before recovery takes place.

The premonitory symptoms of the disease are such as usually attend an ordinary febrile attack. The animal is dull and dejected; the appetite is capricious, and the rumination impaired. The coat stares, and is harsh and dry. If in the field, the animal separates itself from its fellows; it seems uneasy and itchy; it rubs and licks itself more frequently than usual. The muzzle, skin, horns, and ears, are alternately hot and cold. Frequent shiverings take place, resulting from the irregular distribution of blood, which leaves the capillaries of the skin and accumulates round the internal organs. These rigors are occasioned by some sudden depressing agent acting on the system at large, and generally through the medium of the skin. They show the tendency to inflammation, but not the presence of it. They differ from the coldness which ensues when inflammation is established.

If the animal be a milk-cow, the lacteal secretion is diminished, and in some cases it becomes yellow, and thicker than in its natural state. The udder is swollen, hot, and tender. There is generally a harsh and frequent cough; but this is not an invariable symptom, for in many cases it is not observable at all. The back is arched. The animal shifts from one limb to another, and frequently shakes its feet as if to rid them of some adhering substance. The animal is stiff and sore, and very unwilling to move, and, when moved, evinces great lameness. The feet are hot and tender, the fetlocks and coronet are swollen, and there is an ichorous discharge from between the heels. The eyes are dull, sunken, and weeping; and the conjunctiva (the mucous membrane of the eye) and other visible mucous membranes are reddened and inflamed, and sometimes ecchymosed (shew extravasation of blood). The mouth is hot and dry, and saliva drops from its corners. The tongue is rolled backwards and forwards. The mouth is frequently opened, and the motion of the tongue and lips produces a sucking, crackling sound. The animal champs with and grates its teeth. The buccal mem-

brane (the mucous lining of the mouth) is thickened, exhibits little reddish elevations, and, in about twenty-four hours from the first appearance of the disease, is raised into blisters extending across the upper part of the mouth, along the sides of the tongue, within the lips, on the muzzle, and in the nostrils. In some cases vesicles have been observed around the roots of the horns. The eruption of these vesicles is generally attended by a diminution of the febrile symptoms, and the animal appears more easy. The vesicles are generally largest and most abundant along the roof of the mouth. They are irregular, with undulating edges, and without any central depression. They are not surrounded by the distinct zone or areola, which is observable in the pustule of cow-pox. Their margins seldom shew any redness or inflammation, nor is there tumefaction of the neighbouring parts. They are at first about the size of a millet seed, but gradually become as large as a kidney bean, and in some cases considerably larger. Their epithelial (cuticular) covering is white. The serum contained is at first clear, but after some hours becomes opaque. This opacity results from the mixture of epithelial scales, shreds of lymph and exudation corpuscules. In some cases the fluid contained in these vesicles is reabsorbed, and desquamation (separation of the cuticle) follows. The scales formed are very thin and easily peeled off, a red raw surface becoming exposed. Sometimes the vesicles burst, and scabs are formed. Some few of the severer cases run on to ulceration. These ulcers are of a greyish white appearance, are quite superficial, and covered by a glairy mucus which hardens over them. In favourable cases their edges quickly approach; the matter they secrete becomes whiter and less abundant, and a cicatrix is formed in from eight to ten days from the first attack.

But the eruption is not confined to the mouth and the contiguous parts. Vesicles also appear in the interdigital spaces, and sometimes upon the udder and external organs of generation. The hoofs are separated, and seem very small from the increased size of the parts above them. The feet are hot and painful, and blisters extend between the digits to the upper and back part of the heels. From inattention to cleanliness, suppuration often ensues; and the severer cases sometimes run on to caries of the bones, and ulceration and sloughing of the cartilages, ligaments, and synovial bursæ. (The synovial bursæ contain the fluid which lubricates the inner surface of joints). The hind feet are more frequently affected than the fore feet. This is especially the case in stall-tied animals, and appears to result from the hind extremities being more exposed to wet and dirt. In cases in which the vesicles in and about the mouth are large and numerous, the feet suffer less severely; but if, on the other hand, the feet are the chief seat of

the disease, and, if the eruption come out largely in that part, the mouth is generally less affected. In the majority of cases, the vesicles in the interdigital spaces are longer in appearing, and undergo the usual changes more slowly, than those in the mouth, which are less exposed to cold, to changes of temperature, or to other causes which might either prevent their coming quickly forward, or retard the various stages of their development.

Animals in the more advanced periods of gestation, or those giving milk, suffer much from the udder and teats becoming involved. The participation of these parts in the condition of the mouth results from the large amount of mucous membrane which enters into their structure, and from the large quantity of blood with which, in the milk-cow, they are supplied. The udder and teats, like the mouth and feet, are covered with vesicles. In milk-cows the pain is very great, and is much aggravated during milking or the sucking of the calf. In some cases the udder becomes actively inflamed, and the inflammation often spreads from the mucous membrane to the parenchyma of the organ.

Throughout the progress of the disease the appetite is generally impaired; and even in many cases in which it remains good, the animal, from the pain caused by mastication and deglutition, will not eat, and food taken into the mouth is soon dropped again. The breathing is slightly accelerated, and the pulse increased in frequency. The urine is diminished in quantity, and the fæces are dark-coloured. In the early stages the bowels are generally costive; but, as the disease runs on, diarrhœa is often present.

The discharge of saliva, and the number and size of the vesicles, generally increase until about the third day, when the symptoms abate, and recovery gradually takes place. In the slighter cases, a marked improvement is observable even at the end of a week, and in a fortnight the animal is generally quite well; and the lameness, a symptom which often tarries longest, is fast disappearing.

Sometimes, however, from injudicious interference, from exposure to cold, or from other untoward circumstances, the eruption does not come fully out, and the disease assumes a more malignant character. The vesicles appear internally, and by their irritation excite typhoid fever. Ulcerations are produced on the surfaces of the internal mucous membranes. These cause functional derangement; in the alimentary canal they induce draining diarrhœas; in the pulmonary mucous membrane, impaired respiration, and, it may be, death by apnœa (suffocation).

In some cases the disease continues unabated, and produces obstinate and dangerous consequences. In such instances the symptoms are very much aggravated; the fever still remains, and lapses into

the typhoid form; the strength is much reduced; the appetite is gone, and rumination suspended; the animal becomes emaciated; the flow of saliva is very abundant, frothy, of a ropy consistency, and tinged with blood; the mucous membrane lining the nostrils is much inflamed, and secretes a muco-purulent fluid of a disagreeable odour. The vesicles have run on to ulceration; fresh ulcers follow those first formed; they become confluent, and a yellow dark-looking pus is poured out. Cases are on record in which the ulceration of the nostrils has been so violent that the *septum nasi* has been entirely destroyed. The face and head are much swollen, as also are the submaxillary, parotid, and other glands. The breath has a noisome odour. The respirations are quickened, laboured, and occasionally accompanied by a grunt. The pulse becomes small and weak, but is seldom much accelerated. The ulcerations on the feet take on an unhealthy action. Sloughings of the interdigital substance, and even of the whole hoof, occur; the bones are carious; the lateral cartilages and the ligaments are ulcerated, and extensive sinuses are formed. The legs and joints are swollen. Dropsical enlargements appear along the belly, and in other dependent parts. As the prostration of strength increases, the animal is unable to rise; and the consequent pressure is very apt to induce ulcerations, abscesses, and sloughing of the integuments. It is fortunate, however, that, in this country at least, such cases have been exceedingly rare, and that complications such as these have only occurred where the animals have been much debilitated, of a weak and unhealthy constitution, entirely neglected, or the victims of exceedingly injudicious treatment.

The symptoms of the vesicular epizootic among sheep are similar to those observable in cattle. The animals manifest the same febrile symptoms, the same dulness and dejection, the same desire to be alone, and the same unwillingness to be moved. Lameness is soon apparent; the feet are hot and tender; there is considerable swelling around the coronet; and the eruption soon appears on the fibrous interdigital substance. Among sheep, lameness is often the only symptom observed: the feet seem to be the parts first affected, and they almost invariably suffer more than the mouth.

Pigs are also affected by this disease; but the cases are less malignant than those occurring among cattle, and the duration of the disease is also shorter, the animals being generally well in about eight days. The vesicles appear in the mouth and all over the snout; but, as among sheep, the feet are generally the principal seat of the disease, and lameness is often the only visible symptom.

Goats are liable to this disease, which has caused considerable loss in countries where large flocks of these animals are kept.

Fowls are also said to have become affected by this epizootic.

It has occasionally been communicated to the human subject, generally by milking, with abraded hands, by cows affected with the disease. Febrile symptoms soon develop themselves, and the hands and mouth become covered with a vesicular eruption. The cases, however, do not seem in general to have been severe, and the persons rapidly recovered.

From the Journal of Agriculture and Transactions of the Highland and Agricultural Society of Scotland, March 1850.

[To be continued.]

Abstract *of a* Pamphlet *published by Mr.* Joseph S. Gamgee, *Student in Medicine in University College, on the* "History and Description of an Ossifying Enchondroma connected with the Testicle of a Horse."

The diseased specimen which formed the subject of the paper was removed from a four-year-old horse in the operation of castration, by Mr. Cook, veterinary surgeon at Erith. The animal was the sire of several colts, and, though he had been always in an emaciated condition, yet did not appear to suffer any particular inconvenience from the presence of the diseased testicle, which was found, on removal, to contain nearly an ounce of dirty-looking serous fluid. The gland nowhere presented its normal structure, though the spermatic vessels and vas deferens exhibited no signs of disease, either to the naked eye or by the aid of the microscope. The tissue of the testicle was soft and flabby, of a red colour, and ill defined structure; from before backwards it gradually became less in amount, of a pale colour, and eventually degenerated into a thin layer of white fibrous tissue, which was intimately connected with a tumour of moderate hardness, about the size of an orange. The interior of the diseased mass having been exposd by a longitudinal incision, it was found to be of a pale yellow colour, finely and irregularly lobulated, and to contain three small cysts with fluid albuminous contents. The physical appearance of the cut surface neither resembled that of genuine adipose nor fibrous tissue; but what would, *à priori*, have been anticipated from an intersection of a mass of fat by bundles of fibres. In the centre of the exposed surface, some cartilage was visible, and this could be seen and felt extending into the substance of the tumour, which at one

part was so hard that no doubt could be entertained as to its containing more or less perfect ossific matter.

By microscopic examination, the tissues entering into the formation of the tumour were ascertained to be, firstly, fat and fibrous tissue (white and yellow), which structures in no way differed from those met with in healthy parts; secondly, cartilage; thirdly, bone.

A thin perpendicular section of the cartilage with some of the adjoining fibrous tissue, being placed under a microscope, exhibited the true organisation of cartilage; "nucleated cells disseminated in a solid mass or matrix." It is remarkable that, as the cartilage corpuscles approached the surface, they were found to become very much flattened, and apparently to degenerate into, or at any rate to become very intimately blended with, the adjacent fibrous tissue and fat. The intercorpuscular substance or matrix appeared in some situations homogeneous and transparent, in others granular; and at wide intervals a few delicate fibres might be seen winding their course between the cells.

A transverse section of the bone, seen under the microscope with transmitted light, exhibited somewhat imperfectly the ordinary structure of osseous tissue.

With a view to determine how the bone was formed, Mr. Gamgee, after having been shewn by Dr. Sharpey a specimen of ossifying enchondroma from the femur of the human subject, made a perpendicular section of the cartilage, including at one extremity a very small portion of the partially ossified structure. By careful microscopic examination, this section was found to exhibit the same general characters as those in Dr. Sharpey's possession. The walls of the cells were found to become very indistinct as the boundary of ossification was approached; their nuclei were arranged in groups, and earthy deposit, in the form of granules, pervaded the matrix. At the confines of the cartilage and bone, the earthy deposit could be seen advancing between and around the cartilage cells, some of which were only partially enclosed. The quantity of ossific matter obtainable in one section being extremely small, it did not appear safe to deduce any inference as to the mode of transition from mere cartilage, with earthy matter impregnating the matrix, to an imperfect appearance of the true structure of ordinary bone.

The precise structure of the tumour having been ascertained, the question arose—To what class of tumours did the one in question belong? The conclusion arrived at on this point is, in the author's own words, the following: "Considering that the tumour above described agrees with Müller's enchondroma in process of ossifica-

tion—first, in the essential identity of the structural elements; and, secondly, in its benignant character;—rather than create new pathological distinctions (always inconvenient and unprofitable, unless established upon very weighty reasons), I regard the tumour as an *ossifying enchondroma:* though, in the present state of knowledge, it must be considered a very rare, if not isolated, example."

Foreign Extracts.

On a Gad-fly Grub found underneath the Skin of the Horse.

By M. N. Joly, *Professor of Zoology to the Faculty of Science.*

[Read at the Agricultural Society of the Haute-Garonne, April 1849.]

We know that the horse harbours several species of œstrides (or gad-flies) in his body, of which those best known are the *œstrus equi*, the *œstrus veterinus*, and the *œstrus hæmorrhoidalis*, whose habitations are the stomach and intestines. But what we do not seem to be generally aware of, is, that under the skin even, *larvæ* (or grubs) of the *diptera* family breed and give rise to the formation of tumours analogous to such as strike our notice, at certain times of the year, upon the bodies of our large ruminants; and particularly of those who appear, in all other respects, to enjoy the best health. Redi and Huzard (the father) have spoken of these inhabitants of the skin of the horse. Bracy Clark, likewise, has mentioned them in his "Essay on Bots;" but he regards them as identical with those of the *hypoderma* species which exist underneath the thick skin of the ox.

Dr. Roulin, of the Institute, in his *Researches on certain Changes observed in Domestic Animals transported from the Old to the New Continent*, expresses himself as follows:—In the *hatos* of *Llanos*, the horses are almost entirely left to themselves. They are driven up only from time to time to keep them from becoming quite wild, to take off them the *larvæ* of the *œstri*, and to mark the foals with a red hot iron. To what species do these American *larvæ* belong? As yet we remain in ignorance of this.

Last of all, M. Loiset, a celebrated veterinary surgeon of the

Department of the North, published, some years ago, a short *Notice on the Œstrus Cuticolens* of the horse, and has given a description of the *larvæ* of this œstrus, of which we have, according to the text, made a full copy.

At the present day, with Nature herself before our eyes, we feel satisfied that this description, confessed to be imperfect even by the author himself, viewed as a branch of natural history, is wanting in exactitude. And this induced him to introduce a portrait of the insect in question, with a fresh description of it more in accordance with the rigorous precision prescribed by science.

Its character once well established, we shall be able readily to resolve the question, whether the œstrus in point be identical with the *hypoderme of the ox*, or whether it constitutes another species to be added to the genus *hypoderma*.

The *larva cuticolens* (skin-habitant grub) of the horse has a cylindrical form, measuring more round in its fore than its hinder part. It is without brain or feet. Its body is constituted of eleven segments, including the one in which is found the buccal orifice (or mouth), which consists of a very small hole, edged with a black border, with some bristles around so fine as to be with difficulty perceptible by the naked eye. The foremost segment is of all the smallest. From this the segments, as far back as the fifth, grow gradually larger; while, on the contrary, the five posterior continue to diminish as they approach the hinder part. These segments, examined upon their ventral surface, with the exception of the two last, are divided transversely by slight grooves into two unequal halves, each furnished with a great number of spinous tubercles, whose points, upon the anterior half of the segment, are directed backwards, but forwards upon the posterior half. Two cribriform plates, the sole organs of respiration with which the grub is provided, are seated upon a sort of flattened termination of the anal segment.

Alike in this respect to the *hypoderma bovis*, the skin-habitant grub of the horse has, contrary to what is observed in the majority of cases, the inferior surface of the body convex, while the dorsal side of the segments is slightly concave. Such form is in this manner perfectly fitted to the spherical cavity which serves as a habitation for the parasite. It is worthy of remark, that the dorsal surface of the body is without bristles, save upon the two or three foremost segments. The general colour of the skin is white; the bristly tubercles alone being brown, more or less shaded. The skin itself is translucid and vesiculous, as it were. In size the larva is much below the *hypoderma bovis*, since it does

not exceed an inch in length; while the larva of the ox œstrus, at full growth, attains to from three to four inches.

This difference, in itself considerable, is not the only one we have to remark. Upon the subject of our inquiry we do not observe the six longitudinal lines which, upon the hypoderme of the ox, form so many series of tuberculous eminences ranged at certain intervals from the first to the last segment. Neither are to be seen the five or six eminences surrounding the mouth of the latter; though, to make up for it, we find, at the posterior and inferior side of the second segment, a kind of transverse prominence, shooting beyond the surrounding skin, and furnished with very small tubercles, which has no existence in the grub found in the skin of the ox.

These differences, united to those of size, suffice, in our mind, to authorise the conclusion, that the larva in question, though it belong to the genus *hypoderma*, constitutes a distinct species, up to the present time undescribed, to which we shall give the name of *hypoderma equi*.

No doubt we shall be asked what are the habits of this insect in its different states? Nobody, as yet, that we know of, has investigated them. The larva alone being recognised, it is to that the few observations apply of which science is in possession. We know that this larva is found principally upon horses that have been living at pasture in the months of July and August; and that through its presence are caused large indurated knots or buttons upon the skin, which are found in the greatest numbers along the spine, from the withers to the croup inclusive. These buttons, whose volume varies from a lentil to a small nut, have, according to M. Loiset, a shape inclining to conical; and, by carefully separating the hairs clothing them, may be seen on their summit a narrow aperture, resembling such as a large needle would make. Compressing the tumour causes to issue from this opening a minute quantity of purulent serosity, which, after being removed, is followed, in the last months of the growth of the tumour, by a vesicular point, which is neither more nor less than the posterior extremity of a larva. The efforts made to expel this are ordinarily ineffectual up to the period at which its growth fits it for metamorphosis; when, by squeezing the pustule forcibly between the nails, a vermicular body springs livelily out, as though impelled by elasticity, and rolls upon the ground. This body is no other than the larva.

There can be no doubt but that these larvæ feed upon the pus which forms in the tumours that serve them as habitations up to the moment of their transformation; neither is there any that the

bristles clothing their body serve to augment the secretion of the pus through irritation of the skin; no more than there is doubt that the animal makes use of them, like the hypoderma of the ox, for the execution of the motions required for his escape from his foul abode. Once at liberty, he sets out in search of shelter, either in the earth or the dung, and therein, after having remained for ten or eleven months underneath the horse's skin, it changes into fly.

The larva that has been engaging our notice is comparatively rare in the south, but frequently found in the northern parts of France: it is likewise common in Belgium and Holland, along the entire shore of the Baltic and the North Sea.

Save the local phenomena already detailed, the cuticular larva of the horse occasions, according to M. Loiset, no appreciable morbid derangement. Nevertheless, about the period of its full growth it appears to occasion some troublesome itchings, which give way to lotions of cold water, at times slightly vinegared, or else to some of the means employed for the destruction of the larvæ of the *hypoderma bovis*.

How long does the state of fly continue? What are the habits of the insect after it has arrived at its final transformation? These two questions, as yet, wait for answers; but it is to be hoped they will not wait much longer. We have for guarantee of this the renowned zeal of MM. the Professors of our National Veterinary School, touching all that concerns the interest of science, of which those gentlemen are the worthy representatives.

Journal des Vétérinaires du Midi.

THE VETERINARIAN, DECEMBER 1, 1850.

Ne quid falsi dicere audeat, ne quid veri non audeat.—Cicero.

We are not taken aback at "a Sporting Surgeon"—whose letter will be found in our pages for this month—having had his attention attracted by the *status* in society occupied by veterinary surgeons in the country in general, as compared with the relative position they, from presumed professional qualification, appear to have a right to look up to. Veterinary science, efficiently

studied, comes but little short in its demands on its candidates for honours of what human medicine requires of its followers. It is true, that a horse is not obnoxious to so many maladies as frail and fallible human nature is heir to; but, then, to the diseases of the horse are to be added those of the dog, the ox, the sheep, and other domesticated animals; and, though all put together may still fall short in number of the human catalogue, yet are there diseases of animals as difficult to probe the nature of, and others as impenetrable in their causation, as any that invade our own bodies; with the additional difficulty, as regards the former, of our having to deal with a patient devoid of the faculty of speech. It is no proof that our art admits of being practised by any mere pretender because we see persons ignorant of every principle of medicine boldly administering their nostrums to sick and lame animals, no more than it is that the "art and mystery" of the surgeon or apothecary were readily acquired in times when barbers professed and practised it. It is not the profession but the possession of knowledge that constitutes the scientific practitioner; and to the extent that the veterinary surgeon holds such qualification does it appear to us that he may assert claims, as well on the score of usefulness as of ability, to the notice of the liberally educated classes of society.

Granting this, however, we still feel that, for some reasons or other, certain drawbacks attach themselves to the name and office of veterinary surgeon, which so operate against his introduction into society as, in too many cases, to baffle all efforts on his part to disengage himself of them. Some individuals there are, it is true, who seem to raise themselves to a height beyond this tainted atmosphere; while others, with equal pretensions, find it difficult or impossible to do so. Certainly, that veterinarian stands the best chance of accomplishing this who has been brought up as what the world understands by a "gentleman," and who has had the advantages of a classical education, and so forth. Though even he will find times and places when and where the feeling will come upon him, that, after all, he must not forget that he is a *veterinary* surgeon.

Without professing to name every cause which may be supposed to operate as a reason why a stain of any kind should attach itself to us in our professional character, we would avail ourselves of this opportunity of exposing a few of them for consideration;

though, before we do so, we would take occasion to remark, that it is no proof that such does not exist, to bring evidence forward, such as Mr. A. or Mr. B., a veterinary surgeon, enjoying the best society and associating with the literati in his own neighbourhood; or, if in the army, freely and unreservedly mingling and associating with his brother officers. We repeat, this is no valid evidence to shew that professional taint does not exist. These are but individuals, picked out here and there; and, after all, were they themselves closely and confidentially interrogated on the point, we verily believe that in most cases, from their hearts, they would feel themselves constrained to confess its influence. Indeed, were it deemed requisite, we are afraid we could adduce but too marked and substantial evidence of it in our own and surrounding cases.

One ostensible, if not admitted, reason why the veterinary art and its professors should be held inferior to medical science and the practitioners thereof, is, that one is easier of acquirement than the other, does not call for the same standard of intellect, and has, therefore, naturally fallen into the hands of men to practise it of an inferior grade of society. Against the lower demands of our science—if studied as it ought to be—as compared with those of medicine, we have already entered some words of protest; to which here, we will simply add, that in proportion as the requirements of our art call for increased qualification, in the same ratio necessarily ought the character of its student and professors to become enhanced.

Another reason for our alleged inferiority is to be found in the object sought to be preserved or relieved. A horse's life cannot—ought not—to be put into the scale against the life of a human being. It is true that there are men who are said to love their horses better than their wives; and some ladies who set more store upon their *chers petits mignons* of dogs than upon their lords and masters; but this cannot be allowed to have any thing to do with the contrasted worth of human and animal life.

A third reason why the veterinary practitioner often finds himself unable to cope, in point of respectability, with the surgeon, is the circumstance of the habitation of his patient being the stable or the kennel, or the cow-house, instead of the drawing room or the chamber. "The doctor" becomes an acquaintance of the patient

and his family, and probably a confidential one, almost at his first visit; but is the "horse-doctor" asked into the house? If invited at all, is it not into the butler's pantry or the servants' hall? Nay! does he even, at times, see any body save it be the groom or the coachman, with whom his business more immediately is? And does it not often happen that the veterinarian visits his patient and prescribes for him without ever setting eyes on a single individual of the house or the mansion; and that his business is, on occasions, all the way through transacted with those alone who feed and clean his patients? In this respect, the practice of medicine on the dog has much to boast compared with that on his equally favoured brother, the horse; and for this reason many veterinary practitioners have given the preference to *dog-practice*.

By these few cursory observations, elicited from us by the contents of a "Sporting Surgeon's" letter, we hope it will not be thought that we have "befouled our nest," or represented matters worse than they are. We write from no little hear-say and experience, and the facts have appeared to us as we have briefly set them down. The statement of a grievance is said to be one step towards remedying it. In the present instance some persons—out of the profession—might think that we had the remedy in our hands. This is not quite the case; though, no doubt, much may be effected towards our professional elevation by acts against the admission into our body of any save such as can shew they are master of certain qualifications. Our Charter has not yet achieved what was expected of it; and one great reason why it has not lies in the dissatisfaction it has given to one part of the profession, while the other—we believe major part—have been upholding and promoting it all in their power. Let us hope all opposition and wrangling is about to give way; and that ere long we shall have to congratulate our brethren not only on the unanimity of their chartered body, but on the good the Charter has thereby worked for them, and the improved *status*, in consequence thereof, they are likely for the time to come to occupy in society.

MISCELLANEA.

Colonel Chesney's Account of the Arabian Horse.

"Elsewhere, individuals of this species may be more showy, and even more powerful; but it is only in Arabia that the horse is found bordering on perfection. Here he is remarkable for a small head with pointed ears, peculiarly clean muscular limbs, a corresponding delicate slender shape, rather small size, and large animated eyes, expressing that intelligence which, as in the dog, is the consequence of being constantly with the members of his master's family; in fact, he generally shares their meals.

"He is frequently allowed to frolic through the camp like a dog, and at other times he is picqueted at the entrance of the tent; he is exposed to the weather at all times, and, compared with the treatment of his species in Europe, he is scantily fed. A meal after sunset, consisting of barley, in some parts of the country, and camel's milk in others, or a paste of dates and water, which in Nedjd is mixed with dried clover and other herbs, constitutes his usual sustenance; but, on any extraordinary exertion being required, flesh is frequently given, either raw or boiled. The Bedawins count five noble breeds of horses, all, it is understood, derived originally from Nedjd, viz. the taneyse, the manekeye, the koheyl or koklani, the saklawye, and the julfa; of which the last and koklani are particularly prized. The julfa, a small active animal, capable of enduring great fatigue, belongs to the province of El Ah'sá; the other, which is larger, is from Yemen, or, more properly, Nedjd, and is most valued. Of the choice breeds there are many branches; there are, besides, other breeds, which are considered secondary; and every mare of noble blood, if particularly swift and handsome, may give rise to a new stock. The catalogue of distinct breeds in the desert is, therefore, almost endless, and the pedigrees of individuals are varied by certificates which are handed down from father to son with infinite care; and not unfrequently they belong to more than one family, for there is often a co-partnership in mares, and hence arises the difficulties attending the purchase of one. It is, however, certain that the Arab horses deteriorate when taken elsewhere, although both sire and dam may be of first-rate breeds: by the latter, and not the former, as with us, the Arabs trace the blood. The prevailing colours are a clear bay, sorrel, white, chestnut, gray, brown, and black; but the number of horses in Arabia is comparatively few, their places, for almost every purpose in life, being supplied by camels."

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